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ABSTRACT

Presented are numerous motor development activities for sensory impaired, severely and profoundly mentally retarded, and multiply handicapped mentally retarded students of all ages. Background information is provided on program objectives and administration, the multiply handicapped child, motor development, and methods of movement training. Activities for locomotion-mobility, manipulation, stability, and perceptual-cognitive skills are included in the categories of motor development, general movement, and early developmental training. Specific objectives are given along with unit introductions and individual activities. Sample activities include stair walking, jumping from a height, tumbling, and following an obstacle course. In a final chapter communication is discussed in terms of listening activities, manual signs for movements and directions, and the factor of sound. (Author/LS)

THE LOGAN SCHOOL MOTOR DEVELOPMENT PROGRAM FOR THE DEAF-BLIND AND SENSORY IMPAIRED

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FOREWARD

The deaf-blind or sensory impaired child is, for the teacher, a very special kind of a challenge as a student. This student presents problems which make the teaching techniques used even for blind students unacceptable. Although blind, deaf and otherwise impaired students are included in the population intended to be served by this physical education program, its main purpose is to provide the all-important movement experiences necessary for the total developmental progress of the deaf-blind. For the deaf-blind student the potential to move is one area which must be developed to the highest level. Of course, there can be no priorities made on developmental progress. But of the areas of development deserving special concern the area of motor development is certainly one of prime importance. The close relationship between physical education, motor development and many other developmental areas cannot be overlooked and certainly should receive a high priority in all programming.

If a primary fault exists in this program it can be said it attempts to reach too broad a spectrum of special students. This problem is somewhat alleviated by the general nature of this program as it is written. Each activity is designed to, with certain considerations, suit the needs of the total population of sensory impaired students as well as those who are severely and profoundly mentally retarded, and multihandicapped mentally retarded.

What is provided for the teacher is a number of acceptable and effective activities which will fulfill needed objectives in the motor development of the student. No specific directions in relation to the exact methods of presentation are given. This is to allow the teacher the freedom to use his own methods. Suggestions and hints are given which directly apply to deaf, deaf-blind, or blind students when special considerations are called for. Otherwise the teacher's application and use of the activities are dependent upon the needs of the student and the ability of the teacher to carry out the activity as it is written. Activities are presented within each section in a developmental order as they would normally appear. It is best for the teacher to first consult a list of normally appearing developmental characteristics. The chronological ages given will not apply but the sequence of development will be similar on almost every check list which may be consulted. The references in the bibliography by Cratty, Stephens and Tilton have reasonably good lists of developmental characteristics. The teacher should find and begin with the point where the student appears to be functioning and use activities which will suit the specific needs of the student to accomplish these goals.

Some of the activities presented may be called inactive in nature. Others are simple adaptions of well-used activities for motor development. The teacher is encouraged to use all activities which may be of benefit to the student. The teacher must remember that it is the overall educational stimulation and advancement of the student with which we are ultimately concerned. Do not misjudge or dismiss an activity because a degree of difficulty exists for the teacher or student. Attempt to obtain help and assistance wherever applicable. If safety seems to be a factor, make provisions to protect yourself and the student. No activity is intended to cause harm to either the student or teacher. But the possibilities exist and should be clearly recognized. It is the teacher's judiciary and effective use of this program which will determine its possible benefit.

ACKNOWLEDGMENTS

"If the reader seems to agree with the statements presented, it may mean that "great minds run in similar channels", (Cratty P. 183). I found this to be so with some of the references which I used as background material. If the reader of this program feels as though in a similar channel with a great mind it may not be that this writer is one of the "great minds". There were many persons who through their efforts in writing influenced this program.

For the most part the background formation and general organizational material is derived from two main sources. These two writers are Bryant, Cratty of UCLA and David Gallahue of Indiana University. Cratty has written an excellent text covering the area of movement and the blind. The reading and use of this book as a resource helped to frame my thoughts and ideas so that they could more completely be put into an organized whole for the material. In one section on sound and object identification the Cratty text was more closely followed in the information presented.

David Gallahue et al., was an influence both as a professor and as a writer. His organizational basis for the teaching of Physical Education has been of great help to me in all my programming. He has authored or co-authored many books and articles in the area of Physical Education, especially Elementary Physical Education, which deserve reading and may be of help to all teachers concerned with the areas of Special Physical Education.

Two additional sources were used enough so as to deserve special acknowledgment. The Guide to Early Developmental Training was used extensively to make up one section. This manual is an all-inclusive compilation of a vast number of activities in all areas of development. This manual is used here at Logan Center for all levels of age groupings. Its developmental progressions of check lists and activities are quite usable and accurate for use with mentally retarded and handicapped students.

In the beginning writing of this program, two important sources were used to set a mental base for my writing and to develop a programatic outline. The works listed by Louis Tutt, Motor Development Specialist of the Michigan School for the Blind and J. Van Dijk of the School for the Deaf, Deaf-Blind Unit, St. Michielsgestel, Holland were used for this purpose.

A comprehensive program of developmental learning has been put together through the University of Michigan. Within this program is a language development section designed for use by trained mentally retarded workers who are able to teach basic communication skills to others. The information within my program concerned with communication is derived mostly from this basic language program.

As always, it is the students of this agency and those who may benefit from this program that most deserve the acknowledgment of this writer. If it were not for the inspiration provided by their special and unique needs a program such as this would not be of any purpose. These students, though handicapped by impaired vision and/or hearing, reveal through their being that they are of worth and deserving of whatever we, who are lucky not to be so handicapped, can do to fulfill their lives. For by helping them to achieve their greatness, we take a step toward our own greatness.

I would like to express special thanks to Janice Panting for the illustrations on pages 131-135..

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LOGAN SCHOOL MOTOR DEVELOPMENT PROGRAM FOR SENSORY IMPAIRED CHILDREN

General Program Objectives

1. To control the environment through physical-motor movements.

The child needs to move outside of himself - the "I being". Learning to explore objects and obstacles outside the "I being" inhibits the need or tendancy to turn to the "I being" for satisfaction. When the child is aware of his ability to move in, around, over, through, under, obstacles he gains control of himself and his environment.

2. Increase capacities to perform functional activities.

Certain abilities are necessary for daily living and independence. For the most part, these abilities are motor movements. For the multiply handicapped sensory impaired child, especially those who are severely and profoundly mentally retarded, these abilities may be the height of their learning capacity. The motor ability base must be taught to these children. For them it is of the utmost importance. For the others, having lesser degrees of mental retardation, the importance is not negated, but it is understood that they are capable of higher degrees of independence.

3. Learn new physical motor skills.

Physical-motor skills are those which involve the use of the body and its various parts with the neuro-muscular coordination necessary to make their performance on the skill level. Physical referring to the body, motor referring to the neuro-muscular coordination. Aside from the skills and abilities needed for daily living activities the vast variety of movement skills need to be learned. These skills include throwing, running, hopping, jumping, catching, kicking, static (lateral) balance, skipping, etc.

4. Awareness of self through motor movements.

This objective relates closely to numbers one (1) and five (5). The child moves through his environment and learns, not only about the environment but also about himself. He learns the capabilities he has in movement of joints and muscles. He develops an image of himself as highly capable, not so capable or just average. Also he develops an image of himself as to left arm, right leg, head, chest, stomach, etc. In short, he learns what he is and what he is able to do.

5. Develop improved body and self concept.

Although this objective is part of number four (4) it holds great importance in and of itself. The child needs to explore and know his own environment within himself before he can realistically explore the environment outside of himself.

Body image and self-concept are the beginnings of a relationship with objects and other people. The need to know your own face, arms, legs, is important to the eventual knowledge that they are just like or slightly different than those of other people. When the child knows these things he is ready to expand into new fields of learning and development.

Self-concept and body image are important in physical education and are sometimes easily learned through movements. The child learns where his arm is by moving it or having it moved. He may then learn that by grasping an object and moving his arm in a specific manner he can throw the object.

6. Utilization of auditory and/or visual cues which can be potentially received.

This objective is most important for the child who has partial amounts of the affected sense or senses useable. This fact is most prevalent with the deaf-blind child. Using the sense present and those unaffected to explore and receive information from the environment cannot be overover emphasized.

The deaf-blind child must be taught especially to use the eyes and ears. A blind child must be continually told what is happening and about his immediate surroundings. Always talk to a deaf child and be expressive with your body, use signs and/or gestures for communication.

SPECIFIC PROGRAM OBJECTIVES

The general objectives given above cover the entire program. Specific objectives will be given along with unit introductions and individual activities.

ORGANIZATIONAL CONTENT

All activities will be listed and described under one of three headings. These content areas will be locomotion-mobility, manipulation and stability. For the administration of the program these units will be presented in periodic intervals throughout the school year. Their relative importance will determine the length of concentration time. Locomotion-mobility will be considered of most importance, stability, second most, and manipulation third. Each content area will receive full consideration during this unit time period. It must be understood that because of the nature of these content areas there will be some overlapping. But not to the point where one area's objectives override the area receiving concentration.

PROGRAM ADMINISTRATION

Physical Education Director

The primary concern for programming and program administration will be with the Physical Education Director. It will be this person's responsibility to develop individual programs for each student. These programs will be based on the child's needs as far as present developmental level and handicap are concerned. Programs, objective and activities will be taken from those activities included within this program description. Material may be obtained from other sources and added, adapted or developed to fit the needs of the students covered by this program at any time.

Classroom Personel

Secondary assistance will be required of the teacher, aides and/or volunteers associated with the deaf-blind class. These persons will be kept informed of the content of the program, objectives for the individual and their achievement, and program changes. Cooperation from the teacher will be solicited and will be given by the Physical Education Director in all phases of development and program administration. It is understood that the Physical Education Director specializes in motor development and the Sensory Impaired Teacher is knowledgeable of the theoretical and practical aspects of the sensory impaired child. However, part of this program will be to acquaint and educate all particpants in the understanding and education of the sensory impaired child. Also it is important to recognize that the child needs total experience in all areas of development in order to progress. The Gym and the classroom are a necessary combination for the benefit of the student.

Administration Procedures

Specifically, the administration of the program will begin with a physical-motor development test, specially designed for use with the sensory impaired child. It will be a stated objective of this program to develop such a test. These test items will relate closely with the items included in the Logan School Test of Motor Development.

The results of this test along with objectives of developmental plans and PERC reviews will be used to set objectives in motor development. As stated above, objectives will be individually directed as will be their achievement. Some students will be able to achieve earlier than others and visa versa.

When objectives have been set, activity programs will be developed to meet these objectives, set basis for new objectives and maintain previously achieved goals. It will be these activities which form the heart of this motor development program.

At regular intervals re-evaluation, by use of the test, will be made and the cycle renewed. At any time new objectives can and will be made to accommodate the advancements of the student. The test will be used only as an initial evaluation and as a periodic, overall progress assessment. The testing interval will be manual to correspond or alternate with the administration of the Logan School Test for Motor Development.

THE MULTIPLY HANDICAPPED CHILD

The multiply handicapped child is a unique challenge for developmental sequencing. This child may have a combination of maladies including mental retardation (usually in combination with one or more of the others), physical handicaps, neurological handicaps, and sensory handicaps - hearing, speech and/or sight. Of these the child who is sensory impaired, especially visually and/or auditorily, is the most difficult to program for. The child is unable to use the two most important senses necessary in the normal educational development processes. However, the other senses remain intact and are used to the fullest extent for every educational advantage.

This program is specifically designed to suit the needs of those children who are impaired in the sensory areas of hearing and/or vision. For the child concerned here there may be the additional handicap of mental retardation. The retardation varies and may or may not be adequately measured. For this reason we will be concerned with working on the sensory handicaps more than the mental handicap if present to any degree. We would expect mental and intellectual difficulties to improve along with the physical-motor development.

THE SENSORY IMPAIRED CHILD

As with all development the progression from one step to the next is sequential. The motor development levels progress from gross to fine movements and/or simple to complex. There is also some overlapping between levels as in any area of development. In general it can be said that a sensory impaired child develops much the same as any other child, only possibly slower. The degree of developmental retardation depends upon the amount of concentrated effort put into the child's growth. This program is designed to play a major role in forming a strong basis in movement and motor control and for the continuing development in all areas of growth and development for the sensory impaired child.

The problem for the sensory impaired child is that he or she is unable to use one or more of the senses. A true picture of the world within and without is not detectable. Intimations can only be made from information received from the receiving senses (sometimes including the incomplete or distorted information from nearly blind eyes or nearly deaf ears). Rarely is a child totally deaf and blind. The higher percentage of deaf-blind children can sense small amounts of hearing and vision. To say that this program of motor development will drastically alter a given prognosis of impairment, improve impaired senses, or effect any form of cure is to unrealistically extend the actual scope of the program. A condition of sensory impairment is understood to be caused by conditions outside the realm of the possibilities for any physical-motor development program and definitely beyond the expressed scope of this program.

The range of this program is found in the area of adaption to the environment in which the child is involved. For the deaf-blind child this also includes learning to use the defective senses to the utmost. In addition, to adapt or cope with an environment of objects the child must be allowed to experience a large variety of movements and learn movement patterns, abilities and skills. The forms of movement must be dependent upon their ultimate use in adult life or as formation of base skills. The program will begin with the most simple movement experiences and move up to those movements, abilities and skills which lead to adaptation and normalization.

The Deaf Child

What are the sensory impaired children like? What characteristics do they have? How far can they go in the area of motor development?

The deaf child exhibits problems in the area of hearing only. This may effect the speech of the child in addition but this is not necessarily affected to the point where it cannot be developed. The senses of vision, touch, taste and smell are unaffected and used to the fullest extent for sensory experiences and in developing lines of communication.

Many times when hearing is lost, for whatever reasons, there is also impairment in the balancing mechanisms of the inner ear. This fact may make it difficult to experience some movement patterns associated with locomotion in particular. For this reason a determination of the balance impairment, if any, should be made and an extra effort put into developing this sense. A second loss which may occur in conjunction with deafness is a lack of rhythm. This is a necessary factor in the smooth coordination of bodily movements and in the eventual enjoyment of physical motion. A program which utilizes the development of rhythmic movement and coordination will be an essential part of the program for the child determined to have a hearing loss. Using the vision sense and the sense of touch as related to proprioceptive and kinesthetic responses of the individual a total program of movement and physical development can be created and used. Motor patterns for the deaf child are experienced throughout the senses of vision and touch. It is then these two senses which are used as a pathway around the lost auditory sense.

The child learns by imitation of movements and experiences movement through the tactual sensations of the movement. These tactual sensations are proprioceptive - sensing positions of the body and its parts, kinesthetic - sensing the movement of the body through space, and the periferal sensation of the surface moved over, around, within, through, etc. Obviously these occur in conjunction with one another. The child imitates movement and in the imitation the child experiences the movement.

The Blind Child

The totally or legally blind child lacks full use of the sense of vision. The other senses remain intact.

For the purposes of motor development programming the senses of hearing and touch are primarily used. The child in a world without sight is more nearly related to the deaf-blind child because of the importance of sight to the initial self-explorations and exploration of the immediate environment that are so necessary to the developmental process. With the deaf child objects and obstacles can be seen and felt. The blind child only feels most objects, unless it also makes a noise or has a particular odor, thus allowing the child only one mental, sensual, or perceptual picture of the object. It is a well known fact of learning that learning will accrue much faster and be more complete if more than one sense is used in the learning experience.

The use of the remaining functional senses is much like that for the deaf-blind child. Co-active movement programming is used. This can be done more simply because the child is also able to hear visual cues to movements. The auditory cues should relate to the movement of body parts and the directions of movements, thus giving the child a good image of self and of his environment.

The Deaf-Blind Child

The child who is both deaf and blind is uniquely separate from a child who is either deaf or blind. The deaf-blind child has few of the characteristics of the deaf child or the blind child. Their world is within themselves because they know little to nothing of the outside world. All of their sensations are of "Me", not me and someone else, or me in relation to something else. The "I being" is all there is to this child. All stimulation and sensation arise from within this "I being". The senses of touch, taste and smell are the only contact with the outside world. However, these senses do not allow an easily accessable pathway for any form of communication or relation to the outside world.

The deaf-blind child may experience many things on the sensation level - objects, textures, movements, inner feelings of hunger, pain, etc, hot and cold, and any number of other sensual experiences. Without some form of educational programming it is most difficult for this child to move up to the perception level of experience and beyond, especially if some mental retardation is also present.

The motor development program for the deaf-blind child is most important because it is the early development of physical-motor control which sets the basis for all other areas of development. It is in the area of physical-motor experience and expression that the first forms of communication with the outside world can be made. It is also through physical-motor pathways that early communication can be made with the "I being" within the child. Therefore, this program will center on the use of personal contact with the child in motor movements in the form of co-active movements. More will be said about co-active movement later.

MOTOR DEVELOPMENT

All development is sequential, all development builds upon previous development, all development moves upward step by step, all development is systematic. From this point on development depends upon the individual. Human development can be either normal or abnormal. The development of the multiply handicapped, sensory impaired and/or deaf-blind child is far from normal. "Normal" developmental scales are used as a guide and a resource but by no means an individual growth chart.

The developmental stages are common, in one form or another, to all children. However, in atypical development it is not the developmental sequence which is different, but the rate and pattern of development. In normal development, the transition from one stage to another is not always easily detected. On the other hand, the time between stages may be more prolonged with a child whose development is delayed.

Motor development is governed by two principles. These are the cephalo-caudal and proximal-distal growth principles. The former refers to the progression of development from head to foot. The latter refers to growth from the midline or center of the body outward. In line with these two principles is the fact that movement develops from awkward mass movements to more precisional gross and fine coordinated movement patterns, abilities and skills. At each developmental age level certain progressions occur through a spiraling effect. Some skills may remain constant while others mature. A child may revert to an earlier form of behavior without having lost any of his previous skill. This form of regression is usually purposeful in that it provides an opportunity for the child to review and strengthen a previously accomplished skill in order to develop the next sequential step. This then is the spiraling progression of review, picking up new skills and strengthening old ones. For the deaf-blind and/or sensory impaired child this form of development is most important as a tool for teaching and learning.

MOTOR DEVELOPMENT AND SENSORY IMPAIRMENT

For the sensory impaired child movement is essential, the development of a variety of movement patterns and skills is necessary for adaptation to a life which lacks one or more senses. The individual must eventually become aware of his environment and be able to move within it, be it familiar or not. This knowledge of environmental characteristics begins with a self-image. Progressing outward from that point of internal sensation of self. The individual advances to a conceptualization of sights and/or sounds found in the world within and without. Between these two levels of experience are found the levels of perception - the combination of sensation with experience, imagery - formation of a mental picture, and symbolism - being able to relate or associate mental images of the environment. Sensation preceeds these three and conceptualization is the highest step, following symbolism.

Stages of Motor Development

There are five sequences of movement experience which parallel Myklebust's Hierarchy of Experience, presented above. These are exploration, discovery, combination, selection, and performance. The levels are usually defined relating to normal children. For the purpose of this program they will be defined to relate more to the needs of the sensory impaired child. Exploration of motor movements relates to the sensation of experiences. During this level of experience, the child learns to extend himself within his environment. He is able to feel his movement and sense the variety of ways he is able to move. Exploration then is a means of experiencing movement through the senses.

For the sensory impaired child this experience is limited by the handicap or handicaps involved. The teacher or parent must provide those experiences on the sensory level which are beneficial to the child. A blind child would profit most from the movement of arms, legs, and head which explore the environment within his reach just as a normal sighted child would. The multiply handicapped blind or otherwise sensory impaired child benefits from this type of movement as well as would the child who may not have mental retardation as an adjunct handicap.

On the level of discovery the child is able to experience movement through perception of that movement. The child has now explored and sensed a vast number of movements. From these sensations perceptions are formed from the experience of many movements. As the child perceives movements he is then able to discover new movement and to combine movement patterns. These experiences become repetitive. From this repetition the child is able to form mental images of movement and combinations of movements. Using these learned movements, new patterns can be combined to make any number of new patterns leading to the development of skills.

A deaf child should have little difficulty in these early stages of development if the proper movement stimulation is either present or induced by the parents or a teacher. However, the blind or deaf-blind child will have much difficulty unless some effort is put into the sensation - exploration and perception - discovery levels because of the great need for vision at this time. Here the child must manually be put through movements and encouraged to self-initiate movements. The children on these levels must be made to sense, explore, perceive and thus discover a wide range of movements.

Using the intact senses, the child has sensed, perceived, explored and discovered a number of skills. The child can reach out purposefully and strike or bat at a toy or other object to receive satisfaction and enjoyment from the movement and its results. This is combination of movements which lead to selection and eventual performance of selected skills on the highest level.

The development and expansion of movement skills leads the child to the selection of skill combinations to be used as a part of a specific group of actions or in games or other informal occupational activities. Thus selection utilizes the level of imagery to experience movement, combine and select specific uses of movement skills.

At the highest level of physical-motor experience the child functions at the level of conceptualization - able to make ideas concrete and think in abstract terms. When the child, nearing adulthood, is able to conceive movements as specific skills to be used in a game situation he is then able to pick and choose skills for performance in games and sports. These skills are performed under circumstances where accuracy and a highly successful performance are expected. The person selects a few skills to develop to a high level, therefore slighting other skills. At this level the importance is placed on the degree of performance in a few sports, not experience in a wide range.

The sensory impaired child does not progress to this peak level any differently than a normal child would. A stronger base must be developed. The lower two or three levels must receive great effort. From there on up the progress, though not simple, requires only a certain amount of compensation for the handicap or handicaps, but no more than this. These compensations vary but must be made with the objective of increasing personal independence and skill achievement.

DEVELOPMENT OF THE DEAF-BLIND CHILD

Aside from the few general characteristics and principles of motor development, a great many factors enter into the individual's developmental progression. For the handicapped child two major factors are important. These are maturation, related to time and aging changes, and experience. Experience is especially personal and closely associated with the child's environment. Experience can be contrived or normal interactions with the environment within or outside the child. As teachers it is our job to see that experiences, contrived or natural, elicit learning - development - and that experiences cover a wide range of those possible within the environment.

It is most important to recognize that all children have the potential to develop. Multiply handicapped children develop at a slower rate, even with adequate training opportunities, and very little or not at all with no training. With the deaf-blind or sensory impaired child training and stimulation are imperative. Experencial development of sensual and movement experiences is not likely without it. The child is left to little more than the normal aging and maturational development of the body.

An adequate program of deaf-blind - sensory impaired motor development includes much in the area of sensation and perception. Many theorists have closely related motor movements, the perception movement, and perceptual-motor movements to intellectual development. The ultimate goal of any educational training program is the maximum use of the intellectual processes. This motor development

program is geared to the objective of building a strong developmental base in movement and the use of senses leading to the ultimate use of perception and cognition of environmental experiences.

As development progresses from one level to the next the child reaches plateaus which are most important for a motor development program. The greatest emphasis should be placed at these points with recognition of spiraling and regression in mind. Small increments of skill level linked with each other are most important to progression on a plateau and from one step to the next.

METHODS OF PRESENTATION

The normal child develops with little aid receiving cues and proper activities at readiness points. The multiply handicapped retarded child cannot proceed as simply as this. For the "atypical" child learning is development and this child must, in a sense be taught to develop. The normal developmental process must be fabricated with care so as to not miss vital landmarks of development. Cues must be presented in the form of stimulation, movement or positioning. Activities are presented as a form of experience. The activities take the child through experiences which closely simulate normal developmental patterns. In some cases activities are designed to adapt or correct handicaps. In other cases activities can be utilized to set the basis for progression in other fields of development dependent upon physical-motor factors. This includes such areas as communication, socialization, and adaption to sensory handicaps.

Methodology for teaching deaf-blind and sensory impaired must include sensory stimulation. This means the use of functional senses - fully or partially functional - and developing pathways around senses which are totally lost.

CO-ACTIVE MOVEMENT

The most frequently used method of movement training for basic motor development is co-active movement. As the term implies movements are presented and experienced in conjunction with another force. This outside force is the teacher.

Most learning experiences require imitation of movement patterns or skills. For partially sighted and blind children this is impossible by visual means. The senses of touch, kinesthesis and proprioception must be developed and utilized. Co-active movement does this in order to teach movement skills.

Co-active movement is the teacher and student moving together. It is a form of kinetic stimulation utilizing passive and active-assistive movements. In a sense the teacher and student become one moving body. The teacher providing all or part of the muscular movement and the student utilizing his tactual senses to pattern the movement. The student's part is mostly unconscious neuromuscular patterning which should eventually develop into conscious movement control patterns, abilities and skills. This development follows the levels as described by Myklebust's Hierarchy.

In essence the child is able to feel the movements of the teacher. The child senses the bending of a leg or arm, the force and distance of the movement. Total body contact is necessary for total body movement. This is necessary for

beginning training, less contact is required as motor control increases. A child with higher functioning level may sense movement of the teacher when he is in close relationship to the student. Under these circumstances the child senses just movement and not the actual physical-motor action. For this reason the method can be used only for a movement pattern which is already learned or with a child who functions high enough to both sense and imitate the movement. This method cannot be used for initial movement pattern training.

For the most part co-action is used as a beginning phase of teaching. Its use promotes interaction with the environment, imitation training and basic skill level training. The outcomes are as stated before; that being, to provide a basis for communication, socialization and intellectual functioning skills. It is especially useful in the ultimate use of the body as a means of expression.

Co-action can be effectively used to teach any form of movement. For the purposes of this program it will be used as a base elementary teaching method. In general, the teacher begins with lower level skills and progresses on using activities to develop skill factors. Initially begin with total control of the child's movement. As the child gradually progresses he should take more control of his own movements.

Teaching body parts, laterality and directionality becomes important to the eventual independence and skill level of the child. This should be done by verbal communication of parts, direction, and left-right commands and naming parts while moving. Tactile sensations become associated with movement which in turn becomes associated with a body part or direction. Always be accurate and consistent with all terminology. Coordination must exist between classroom teacher and motor development specialist on all terms to be used.

SENSORY STIMULATION

Using co-action basic skills can be easily presented. For continuation of previously learned skills or to teach a child who has effective communication stimulation of the senses is useful. This can be accomplished by touching a body part or initiating a desired movement. A combination of the two is also possible in the early phases of learning. The use of this form of stimulation should not move into co-action as this method gives much more support and aid than required. The ultimate goal of any teaching method should be the development of independence. A method which does not promote independence and higher function should not be tolerated under any circumstances.

Tactal stimulation is used as motivation or a cue to initiate a movement pattern. If the child is aware of the desired movement touching the body part to be moved should be satisfactory. In order to communicate the desired action the extremety may be put through the action. The child then repeats the action on cue.

In lower level communication the actual muscle or muscle group may be stimulated by touch - lightly stroking the area in the direction in which contraction of the muscle is desired. Of course a basic knowledge of muscle locations and actions is required for this method. It cannot and should not be attempted without this prior knowledge.

The use of tactal senses of the deaf-blind, sensory impaired child cannot be over emphasized. These senses are generally the only remaining senses useful for motor development training. However, other senses can and should be used when appropriate. The multi-sensory approach to teaching works well even with sensory impaired children. Sometimes it is all that is left when the visual and auditory senses are totally lost.

GENERAL PROCEDURAL METHODS

As a general principle all methods should be beneficial to the child and satisfy the accomplishment of objectives. Always begin with the objectives as given by the activity. Begin with the simplest or most appropriate objective and follow the procedure of the activity always keeping in mind the objectives.

The ultimate results of everything you do for the child must be the highest form of independence attainable. The less things you do for the child the better. It is appropriate to give support but support should be lessened as the child's ability to "stand on his own" increases. This is not to say that the child cannot place confidence in you, but he must have the confidence that you are helping, not making him dependent upon you.

Under these circumstances, a child learning to climb stairs would require a great deal of support and assistance. Co-active movement would be used first of all, where the teacher does everything with the child following. Co-action advances to stimulation or active-assistive movements where the teacher stimulates the child to step up or down with the appropriate leg. At this point the child should be able to balance fairly well going up and down the stairs.

Next the child is encouraged to transfer support from the teacher to a wall or railing. The teacher moves with the child, supporting the other side. As the child advances, lessen support on the side opposite the railing or wall. This will force the child to accept more of his own weight and be responsible for more of his own support. Eventually the amount of support will be reduced to where the child takes your arm or holds your hand. Actual physical support is replaced always with motivation and much praise. The actual encouragement is something between you and the child, but there should never be a lack of it and there cannot be too much.

A deaf-blind child should never be left alone or allowed to fall without support. It is understandable that a child may fall or trip but someone must be there to break the fall and return the child to the task as quickly as possible. Falling, tripping, etc. are not bad or undesirable happenings. They are part of life. But a deaf-blind, sensory impaired child should not experience the fear or pain causing factors of falling until he or she is able to satisfactorily cope with the fall and be able to get up and start over on their own. This is a concept related to failure. The handicapped child does not need to experience failure until self-image and confidence are such that failures can be accepted and overcome.

ACTIVITIES FOR MOTOR DEVELOPMENT

The following activities are specifically designed to elicit motor development progress from sensory impaired and deaf-blind children. In most cases their actual use may be varied depending upon the individual child and the teacher's approach to the activity. Objectives given for each activity are general and related directly to the activity and equipment used. For many of the activities other objectives may be introduced in order to suit the child's needs. These must be adaptable to the activity and equipment without losing the actual intent of the activity.

All activities will be categorized as locomotion-mobility, manipulation, or stability. A separate section will be concerned with the obstacle course, which is a special area of need for the deaf-blind child. Other activities related to motor development are available and will be used in addition to these to correct or develop special areas of problems and handicaps.

LOCOMOTION-MOBILITY

The ability to move about from place to place is a most important animal characteristic. It is one of the main differences between plants and animals. The ability to move on two legs in an erect posture is unique to the primates, of which man is the principle member. Using the mental powers and physical characteristics which belong to man alone we are able to move from one place to another through a vast number of means. These include movement by self-propulsion, or vehicles which provide propulsion other than that provided by man's physical strength alone.

The fact that we, as humans, are able to progress from a child, unable to move with purpose, to a fully developed individual, able to move about within nearly any environment, is a remarkable happening specific to the human creature. This happening is a procession of inter-dependent skill developments which begin from the first movements of the child and are able to continue throughout life with any number of adaptions or additions. All motor development of locomotor skills is based on the patterns, abilities and skills developed and learned in the first seven to eight years of a normal life. With a child unable to progress at a normal rate, these years are broken into a number of developmental levels or plateaus. Additional handicaps must be compensated for in the developmental progression and some areas given more attention and more importance.

The area of locomotion, the ability to move from point to point, is a specific area of motor development which is important, calling for specific attention. The blind and deaf-blind child requires this additional attention in locomotion in order to develop through a normal sequence. For this child the ability to move from one point to the next effectively is only part of the overall needs. The ability to move in a controlled efficient manner is of equal importance. This special capability can be termed mobility.

The blind and deaf-blind child, youth and adult must not only be able to walk, run, skip, hop, jump, etc. from one point to another, but do so in an effective and efficient manner. This usually calls for locomotion in a straight line, or the easiest and shortest path between two points. The non-sighted or visually limited individual may have difficulty moving in a straight line (a veering tendancy is common to blind persons), difficulty perceiving curves, corners or grades of a surface, or difficulty negotiating obstacles of various sizes, shapes and configurations. Therefore, not only the simple ability to move from place to place but the ability to do it with a degree of efficient control and perception is most necessary.

It is this specific area of locomotor and mobility skill development which this section will be most concerned. The activities will be designed to teach, develop and practice these skills in developmental levels of sensation, perception, imagery, and possibly symbolism. The first three levels will be of primary importance due to the intellectual level of many of the students who will be affected by this program and the fact that the other levels of experience call for other experiences outside the area of motor development. When the child passes into and beyond the imagery stage of experience he or she is out of the range of purely physical experience and not as dependent on movements for experience only.

The Locomotion-Mobility section will progress from the earliest form of locomotor movements to the more complex skills which are within the scope of this program and the average range of the students affected by this program. Reference must be made to the sections of this program dealing with general movement or early developmental training for activities necessary to bring the child to the level of locomotion skills as will be presented here.

BASIC LEVEL SKILLS

The following skills will be presented in the order by which they logically appear in a normal developmental sequence. In general it will be understood that the sensory impaired and deaf-blind child could not develop along this progression unless the described training is introduced at the proper times. The premise that the child is able to sit unsupported and creep will be taken for granted. Previous work in early infant stimulation and developmental activities will have already been accomplished. Information and activities in this area are to be found in the section entitled Early Developmental Training.

Basic level skills are those motor skills which are primarily simple, one action movements. They are not necessarily associated with or in combination with other movement skills and include the fewest number of outside (non physical-motor) factors. This does not mean that basic skills cannot be made difficult by the introduction of variations or outside factors. But in their pure form they are unique in and of themselves. Essentially a basic skill is positively related to the well known atomic elements of matter in that they cannot be broken into other compound factors.

The basic skills of locomotion-mobility are walking, stair walking, climbing, jumping, hopping, horizontal jump (for distance), and sliding. The development of these skills set the necessary base for further progression in locomotion and independence in mobility.

(1) WALKING is the act of putting one foot ahead of the other with the corresponding shift of body weight to the lead leg following which the opposite leg moves ahead to take the weight as the cycle continues.

This is indeed a simple description of a much more complicated task. For our purposes it will suffice to maintain the fact that each step is followed by a shift of weight. This is almost a reciprocal motion which cannot and should not be reversed except in the very early walking stages.

KNEE WALKING

Objectives To develop the walking pattern, increase postural strength of hips and trunk, develop alternating cross-pattern motion, develop and enhance the use of arms in balance and movement.

Equipment Mat, knee pads if necessary.

Position- The student is standing in an erect position on the knees. The hands are held clenched or open, the elbows are slightly flexed, the arms are at the side.

Action- One or two assistants may be needed to provide support for the student in the initial phases of work. With the support of the assistants the student walks on his knees progressing forward by moving one leg at a time.

Initially it will be necessary to provide most of the positioning support while the student moves his legs only. Gradually ask the student to take increasing amounts of his own weight and to support his own trunk. Manipulate the student's arms so that they move in an exaggerated cross-pattern movement. Again allow the student to take on more and more of this arm motion. The cross-pattern should already be present from creeping but may have to be reviewed and practiced. This would be an example of the spiraling progression within a developmental plateau.

With this activity and the others it may be a good idea the teacher to do the activity first on your own. Although the teacher and assistants may be very capable of performing the exercise without any difficulty they should attempt to gain some empathy with what they are attempting to get the student to do.

Teaching this activity may require some muscle stimulation and most likely co-active movement for the initial phases. Be sure the student is aware of the movements to be performed before attempting to get him to move while taking any part of his own support. A deaf child may pick up this exercise very easily while watching a demonstration by the teacher or aide.

CRUISING

Objectives- Increase independence of walking, develop leg, hip and trunk strength, enhance the use of the arms in the walking action.

Equipment- Stall bars, parallel bars or other pieces of furniture or classroom equipment which are stable enough to support the student's weight.

Position- The student stands erect maintaining support with the aid of a bar or piece of furniture. It is suggested that the student pull herself to this position to begin the action.

Action- While maintaing support and balance on the bar the student walks from one end to the other and returns.

Although this activity should be accomplished as independently as possible some aid will need to be provided in the early stages of learning. The student will need to be able to find his own best standing position where he can maintain balance and stability. This may appear quite awkward at first. Help the student find his most comfortable position. When on balance he will appear to have a rather gross sense of symetry and stability. Movements may also be quite hesitant and "jerky". Provide much encouragement to keep the student up and moving. When he falls get him back up and moving again quickly.

Although the parallel bars are a good tool to aid the student's walking progress and develop a degree of independence, they do not work with all students. If the student shows severe dislike of the parallel bars use the physical contact methods already presented in order to keep a continuous pace of successful advancement.

A third level of assisted support is simply to hold the student's elbow or hand while standing at his side. From this the child receives mostly emotional support and guidance and occasional aid when he may lose balance. A blind student can be worked into guidance training from this by asking the student to hold the teacher's arm. For the blind and deaf-blind this will be a necessary mobility skill.

When providing support or assistance to a student from the side it is a good practice to switch sides periodically during the practice session. This allows the student to gain strength on both sides and keeps him from depending too much on one side only.

The release of support included in this activity is leading the student into the next activity which may be initiated when the student is into the third level of assistance support.

UNASSISTED WALKING

Objectives- To increase and further develop the muscles used in walking and posturing support, increase balance, develop normal walking gait, develop independent walking.

Equipment- None except an obstacle-free area

Position- The student stands erect in a normal walking position. The student maintains his own support and balance. A teacher may stand at his side, but only for the purpose of correcting an occasional error in step or balance. The student should be made aware that the teacher is there and what the teacher's purpose is in being at the student's side.

Action- The student walks independently for as many steps as he is able. Much support in the form of encouragement and praise should be given.

At first the student's posture and walking gait may resemble his first efforts at assisted walking, legs spread and a forward lean of the body. This is another examole of the spiraling progression of development. When this occurs the teacher must point out the student's errors and in some cases give sensory stimulation to remind the student of correct posture or walking gait.

When a student has gained independence or near independence, initiate a program where the student is asked to use his hands to find obstacles in the environment or to follow a path. In this program the student is taught to follow a wall by keeping a hand in contact with the wall. He also is taught to use his hands in front of him to warn of impending obstacles or obstructions in his path. These skills are primarily removed from the Physical Education class but are best initiated in a regular program at this point or even earlier in some cases. This is also another reason for keeping the student's hand at shoulder level back in the assisted walking stage.

The initial phases of cruising will require some exploration and two or three different pieces of equipment should be provided on which the child may cruise. Eventually the child should be cruising on a wide variety of objects and should be able to find his own cruising area and should pull himself up to standing. This is a normal step in the developmental process and should receive much emphasis. A child who is able to cruise independently will eventually gain a higher degree of independence in walking . For the deaf-blind and blind student this can be very important.

ASSISTED WALKING

Objectives- Improve independent walking, increase strength in the legs, hip and trunk, increase balance and stability, develop and improve standing and walking posture.

Equipment- Broom handle, large rubber ring, string or rope.

Position- The student is standing with one or both hands holding a bar or holding the teacher's hand or hands. The student's hand should not be raised above shoulder height under any circumstances. This is because the arms and hands are an integral part of the balancing process for the student. When the hands are raised above the head it raises the center of mass or center of gravity thus requiring an unnatural stabilization effort on the student's part.

Action- The student walks in a normal walking pattern with the aid or support of the teacher. At this point the student should be able to stand alone for extended periods and posturing should not be a difficulty. The support assistance provided by the teacher is to help the student with the transfer of weight while stepping. This weight transfer is necessary so that one foot may be lifted and carried forward while the other leg takes the weight of the body.

In order for the student to eventually accomplish this transfer independently the support of the teacher will have to be gradually released as the student is asked and encouraged to take his own weight and support. The normal progression of releasing support can be accomplished as follows: First, support can be given by holding from behind and under the arms, the teacher's hands clasped around the student's chest. At this point almost total support is given and movement is co-active. This procedure advances to the teacher standing at one side or the other and holding the student under the right arm (the teacher is on the student's left side) with the teacher's right hand, and holding the student's left elbow with the teacher's left hand. From this position minimal support and direction can be given. At this level the teacher may also guide the student from in front by holding the student's hands and walking backward giving minimal support and direction. (The student is walking forward; the teacher backwards.) Other pieces of equipment such as a bar, ring, or rope may be used which the student holds onto while walking. One piece of equipment which may be beneficial to the student at this point is the parallel bars. These should be set at a height which is even with the student's wrist when he is standing and his arms are held straight at the sides. When the student is walking in the parallel bars, he holds onto both bars, one in each hand. Stress the cross-pattern placement of hands and feet. The right hand slides forward as the left foot steps, etc.

(2) STAIR WALKING - As a definitive term, stair walking does not follow closely with the definition given basic skills. However, for the blind and deaf-blind, this skill is, in a sense, a step up, as it were, from the walking skill. In addition to this the ability to walk the stairs independently is a skill which will ultimately normalize the student into the world of the sighted.

Stair walking is then both a locomotor and a mobility skill. In its basic level form it is a locomotor skill related to climbing. As a mobility skill it is necessary to negotiate not only stairways in buildings and houses, but also curbs and other similar obstacles and obstructions.

STAIR CRAWLING

Objectives- Develop initial independence on the stairs, set a basis of motor and kinesthetic sensation or memory as related to the stairs, increase strength of postural muscles, enhance cross-pattern movement.

Equipment- A flight of stairs or a set of therapeutic stairs consisting of not more than three or four steps and not less than two steps both up and down.

Position- The student is placed or gets himself into a position where both feet are on the floor and the hands are placed on the stairs, two to three steps from the floor.

Action- The student executes a normal creeping movement, moving up the stairs one step at a time. When the student reaches the top he stops and returns to the floor by reversing the action of going up. Do not allow the student to go down the stairs forward, at first. The cross-pattern should be maintained throughout. Although the student may perform the two-step alternating gait, where one foot then the other is placed on a step so that both feet are on the same step. Encourage the performance of a cross-pattern and an alternating one-foot-per-step action. Some sensory stimulation may be necessary even to the point of passive-assistive movement to develop the cross-pattern.

Work to develop the awareness of where the legs and feet, arms and hands, are located in relation to each other and in relation to the stairs. The deaf-blind, deaf, or partially sighted student should be able to watch these body parts as they move. This is a good idea to have the student watch the movement of body parts while performing all movement skills. For the totally blind student, continually remind him of limb position and call attention to movement of each. Perhaps more sensory stimulation, touching a moving limb will be required for the totally blind.

The concepts of up and down can be presented quite adequately during this set of activities. Remind the student of his direction of movement, up or down. Attempt to present a motor memory or sensation of height or movement up or down by physically relating the student to a stationary point which has been previously perceived as being high or low in relation to the student's position while standing on the floor.

For example, a mark which can be felt is placed at a stationary point on the wall above the student's head, within his reach. This point is sensed and described to the student as being high (another point can be described and sensed as being low). When the student climbs one or two steps again have the student feel these points and describe his relationship between them, the difference between the floor-standing and stair-standing heights as the students perceives it.

ASSISTED STAIR WALKING

Objectives- Develop a stair walking pattern in an erect stance, improve strength in balance and stability, develop independence on stairs.

Equipment- A flight of stairs or therapy stairs with a railing or positioned near or next to a wall.

Position- The student stands erect at the base of the stairs. The hands may be holding the rail or placed against the wall.

Action- When the student has gained some definite independence on the stair crawling skills, begin this activity in conjunction with stair crawling. The student should be able to stand in an erect posture with little or no assistance for at least 30 seconds before initiation of this activity.

In the first phase the student should use the support of the teacher and the wall or railing to walk up the steps. Progression is a two-step (two feet on one step) alternating movement one step at a time. This should eventually lead or be lead into an alternating one-foot-per-step progression up and down the stairs. The student will be able to walk up this way before he is able to walk down by this means. If the flight of stairs is more than three to four steps do not go up or down more than three to four steps to begin with.

The student should rely on the teacher and/or the wall for support and balance and not standing support. Although the student may at first be fearful of the stairs, provide much encouragement and motivation to keep the student supporting his own weight and depending on aid for balance only. This also with the understanding that the support will be gradually released as the student is is able to take on more of his own balance activity.

The complicated transfer of weight in stair walking is equal to that necessary when the student first learned to walk unsupported. The progression of support release should be gaged the same and much of the same methods of motivation and gradual release can be used.

For the blind and deaf-blind student co-active movement experiences are useful as a teaching tool and as a method of support in the early phases. To progress from this to other forms of assisted walking the teacher can provide side support (as described in the assisted walking activity) or walking up the stairs with the student. Eventually, if this is possible, the teacher can assist by walking along side the student and provide whatever assistance is necessary.

Gradually the teacher should ask the student to use the railing or wall for support along with taking control of his own balance. This removes the

teacher from the stair walking activity and will thus increase the student's independence. The student should not be left alone at this time and still requires much encouragement from the teacher. This may require simply holding the student's hand, without giving physical support.

UNASSISTED STAIR WALKING

Objectives- Develop and improve stair walking independence, improve strength of leg and posture muscles, develop normal alternate one-foot-per-step stair walking gait

Equipment- A flight of stairs or set of therapy stairs with or without a railing. If without a railing the stairs should be moved away from the wall.

Position- The student stands in an erect position at the base of the stairs.

Action- The student walks up and down the stairs without the aid of a railing, wall or other outside assistance. If the student has been given a good base of support in the assisted walking activty and allowed to take his own weight and balance in a steady, gradual progression of release and aid, he will be ready to successfully take on the stairs alone.

Be sure that the student maintains a good walking posture throughout the activity. Going up and down, the body should have just a slight forward tilt. Actually the line of the body should form a right angle with the steps at all times. Some students will walk with the body tilted backwards in an attempt to over-compensate for the abnormal step-up. This shows a lack of coordination and it needs definite work. Instruct the student to lean forward while walking; but not so far as to touch the steps with the hands. The teacher may have to manually position the student in the proper position, over-compensating forward just a little, until he is able to sense the proper posture on his own.

At the beginning the stepping may be the two-foot-per-step variety. This can be allowed at first, until the student gains some self confidence of his own on the stairs. As soon as possible get him to begin the one-foot-per-step stair walking gait. This will take some effort because of the lateral and frontal shifts of weight which are called for simultaneously in this movement pattern.

The student may require a small amount of support, mostly moral, by holding his hand. Also first passive-assistive movement placements, then sensory stimulation of the stepping leg will need to be given. The size of the step, up and out, should be known to the student but be sure that he is made aware of these distances at this point so that a good motor-memory is established relating to the length and height of the steps. This seems to be most important in the phase where the student is alternately putting one foot on each step. Do not allow the deaf-blind or partially sighted student to only feel the step to gage distance. Have the student look at the step and watch the movement of the feet and legs so that the feet are placed properly on each step. This will normally become less and less a habit as the student becomes used to steps and can step properly without consistent attention to the step placement procedure. The student should gain the habit of looking periodically to check for obstacles and his own foot placement. This is actually a very normal thing we all do or should do while walking up or down stairs.

(3) CLIMBING - Climbing is the act of moving the body, usually up or down, and over, into, through, around, etc. an obstacle or obstacles. Stair walking can be included in this but due to its specific need in mobility and the normalizing development of the sensory impaired student, stair walking was left as a separate skill.

Necessary for the correct performance of the climbing skill is a base form of coordination of the arms and legs. The arms are usually thought to be the most important limbs used in climbing because they provide the pulling up or slow release down of the body. The legs usually act as a guide and assist the arms in stabilization and support. In most cases climbing involves a modified creeping movement.

ASSISTED CLIMBING

Objectives To develop and strengthen the muscles of the arms, shoulders, legs, and trunk, improve body awareness, develop and improve the coordination and cooperation of the upper and lower limbs of the body, improve sense of confidence or self-image, develop and enhance experiences and relationships with obstacles within the environment.

Equipment Various objects, large and small, all shapes and sizes which may be climbed and support the student safely. (Tables, chairs, benches Swedish Box, stairs, boxes, mats, a barrel on a stand, a ladder, etc.).

Position The student stands next to the object to be climbed with a hand or hands placed on it, on the top if possible.

Action The definition of climbing given is a very general statement. It says little about the object which is to be climbed and the students action in relation to it. To attempt to describe the action which is involved in climbing a large number of objects, only one will be used in a descriptive sense. It is my desire here to be able to make it easier to generalize the actions to other objects which are to be climbed. The object which will be described is a large box which is approximately 5 feet high. It is usually termed a Swedish Box or Vaulting Box. For our purposes it serves as an effective piece of equipment for climbing.

The student reaches up as far as possible on the box. If the student is unable to at least reach the top help him with a boost or have him start from a bench placed next to the box. When the student has a hold on the top have him pull with his arms to raise his body from the starting surface, the floor or bench.

It may be necessary to teach the concept of "pulling" to the student. This can be done by pulling on his arms from the front thus initiating a simple stretch reflex when the student pulls away. This should be done before the student begins the climb. Another method is to combine the above action with manually putting the student's arm through the movement of pulling. When climbing it is also helpful to lift the student up as she climbs with her hands in place. This will automatically put her arms through the pulling motion of flexing the arms.

When the student has pulled himself up, the legs are then used to push on the surface of the object being climbed. If this is not possible go to the next step. The student raises the leg opposite the lead arm, the left arm for a right handed person; thus the right leg would be lifted. This leg is raised by flexing at the hip and knee so that the leg can be placed on the top with the arms. A rotation of the body also occurs to allow this leg placement. The student then uses this leg and the arms to further pull the body up.

At this point the leg, two arms and the trunk are on the top. One leg remains hanging over the side. The body is rotated around the obstacle so that the lead-arm is over the side with the leg still hanging (the left leg in this case). The lead-leg is rotated to the opposite side. As the body further rotates around the obstacle the stomach and chest maintain contact with the top of the obstacle. Both hands then move to the side just climbed and both legs are on the opposite, down-side.

The actions of the arms in the climbing action is reversed to allow the body to slide down slowly to the floor. The arms slowly extend, holding the body up until the feet reach the floor.

Assistance can be given at any point of the climb, up or down. This may require the aid of one or two people depending on the size and strength of the student and the teachers or aides. The student can be easily boosted up by holding at the waist, or better, under the arms. This places the arms in their working position. To bring the leg up the teacher's hands can be placed under the student's arm and on the leg at the knee, just a little above the bend of the knee.

When the student is in position on the top, help may be given to rotate the body around. The teacher must be on the down-side of the obstacle to give aid. Here aid can be given by holding the student under the arms or at the waist to help lower his body to the floor.

Always keep in mind that it is the student's ultimate need to be able to accomplish this feat on his own. So give only that help which is necessary and allow the student to take whatever amount of his own weight he is able.

Be sure to name and point out body parts and their actions throughout this climbing skill practice. This is most important because sensory input is being received from all parts of the body during this set of movements and the student needs to be aware of what these sensory stimuli mean.

UNASSISTED CLIMBING

The objectives, equipment and action remain the same as described in the previous activity. Only the assistance given by the teacher is dropped. The student should be allowed to discover and climb a wide variety of obstacles which call for new stimuli and some variation in the basic climbing action.

Some help will be necessary to negotiate new obstacles but this can be released early so that the student becomes completely independent on all forms, shapes and sizes of obstacles and can easily move the body up and down without difficulty.

(4) JUMPING

Jumping is the forceful act of propelling the body from the floor or any surface by the use of the muscles of the legs in particular. The basic movement is a simple jump using the legs only for the upward force. As the skill increases and coordination becomes more of a factor the arms, trunk, and hips are also included in the jump. The specific use of the arms in combination with the legs will be the only other factor introduced into this activity. A jump will be considered a jump when the individual's feet leave the floor under his own power or assisted power.

ASSISTED JUMPING

Objectives To develop and improve the skill of jumping, to increase the strength of the legs, hips, arm and shoulder muscles, develop and improve general coordination of the arms and legs, enhance body awareness, introduce and practice a means of propelling the body through space, spatial awareness, development of a base of jumping skill to use in other forms of jumping.

Equipment Trampoline, Mat.

Position The student is standing in an erect position. An aide or teacher is standing behind the student or in front of the student.

Action For the initial work on this skill two aides will be needed to help support and guide the student. The student must first be introduced to the motion of the legs. The action of the knees and the ankles are most important in this effort. Even though the deaf child will be able to watch the performance of the teacher as he demonstrates, the feel, kinesthetic sense, of this movement, as well as others which may be presented at any time, are most important. So manually putting the student's legs, knees and ankle joints, through the specific motions of jumping in a standing position is most important to the student's eventual learning of this skill. It should be done while standing so that the student is able to sense the shift of mass involved in the jump.

For this activity one aide supports the student while the other puts her through the movements of bending the knees and ankles and the spring upwards. The feet do not have to leave the floor at this time since it is the basic feeling of the body's movement which is important here. Put the student through this movement 3 or 4 times in succession. Continue to use this as a means of stimulation and review periodically as the student practices the jumping skill. It can only help to reinforce the motor memory pattern development which is so necessary especially to the blind and deaf-blind student.

The second phase which should be used along with the initial patterning is when the teacher, standing in front of the student performs a single jump. This is an attempt to get the student to perform the jump or to raise up on his toes as the teacher jumps. A drill which will be helpful here is to perform simple toe raisers with the student while holding the student's hands. In this way the student is able to feel along with the teacher the movement of raising his body up.

During this time the trampoline is a valuable tool for teaching and practice.

Along with the aid of the teacher and the trampoline the student is able to perform a jump with little effort and experience the weight shift and balance maintenance involved with this skill performance.

As with all skills continually ask the student to perform as much of the skill as possible independently. The jumping skill can be performed with relative independence by the student while standing near a bar, or wall or on the trampline. Progress to the use of these means of lessened support and assistance as soon as the student is able.

UNASSISTED JUMPING

The objectives, equipment and position remain the same as in the above. The action is also the same excepting for the exclusion of aid or support given by the teacher. Leading up to this activity the student is asked to do more and more for himself. This requires the moral support of the teacher in building the self-confidence of the student. This form of independence is oftentimes difficult to develop within a student who is quite used to and accepting of his dependency on others. Failure increases this sense of self-uselessness, a low level of self-image; successes, contrived or actual, are the keys to developing a positive sense of self-worth and eventual independence.

As stated previously, independence, at whatever level possible is the highest goal we should seek in teaching sensory impaired, especially deaf-blind and blind students. Independence comes only when the student feels she has reason to attempt independence. It is then the skills and self-esteem developed within a total program of training that can give the student the ability to seek and find independence.

The inclusion of the arms to help raise the body may be introduced at any phase of the jumping skill training. As the student attempts to jump he is actually attempting to raise his center of gravity or mass, located usually in the area of the abdomen. This is easily accomplished when the arms are raised. When the arms are raised just prior to the forceful explosion of jumping, it gives the body a headstart on shifting the weight upwards. A sense of coordination, a cooperation between the action of the arms and the legs, needs to be developed. This can only be felt by the student as it is difficult to adequately describe to the student.

Allow the student to jump on the tramp with his arms raised above the head. When jumping with the student, raise his arms as he jumps. Encourage him to do this on his own so that the fine coordination can be developed. Practice squat jumps where the student begins from a crouched or squat position and explodes upwards beginning by raising the hands and arms upwards forcefully and following with a full, forceful extension of the legs. Encourage the student to reach as high as possible for objects just out of his reach.

(5) HOPPING

Objectives Basically hopping is jumping on one leg. It requires a more refined sense of balance in that the student must maintain his body weight on one leg while jumping and landing on that same

leg. Initially the student will have a preferred leg to hop on. This will be the same leg on which the student prefers to stand when standing on one leg. Eventually the student should be able to stand and jump, hop, on either leg. Pre-requisite to the hopping skill is a somewhat advanced ability to stand independently on one leg from 5-6 seconds. However, one skill may be used to enhance the progression of the other. In either case there are assisted forms of teaching which will be utilized so that when the student is able to jump well he can also begin to learn to hop and develop his lateral balance as well.

ASSISTED HOPPING

Objectives Develop and improve lateral stability, develop and strengthen the muscles of the arms, shoulders, trunk, hips and legs involved in jumping, hopping and lateral stability, introduce and enhance a variation of jumping, improve gross and fine coordination of the body, improve self-image and self-confidence, spatial awareness, body awareness.

Equipment Trampoline, Stall Bar or Parallel Bars.

Position The student is standing with one leg held up from the floor. The weight should be mostly on the leg on the floor with some weight taken by the bar or the assistance of a teacher or aide. The support is mostly for stability and not to carry the student's weight.

Action The student jumps up using the force and power of one leg, with the support of the teacher. The balance support will need to be provided just ahead of the lift off, in the air and upon landing. When the student has left the ground, be careful so as not to set him off balance by shifting his weight.

The lift off should be straight and with the full force of the foot on the floor. Attempt to get the student to absorb her own weight by landing on the toe and bending the knee slightly. The teacher will need to help the student with this by taking some weight at first because injury may result if the student lands incorrectly.

At the beginning the student may have difficulty holding her leg up when hopping. She may even drop the foot to help with balance upon landing. This is to be expected and is acceptable, but should be discouraged when the student becomes more used to the hopping movement.

Encourage the use of the arms as in jumping. The arms become particularly important when hopping not only for the aid in raising the center of mass, but also to help with balancing the body.

UNSUPPORTED HOPPING

The objectives, position and action remain the same as with assisted hopping. The student performs the skill without assistance from outside support. In this activity as with the previous activity the trampoline is used for building strength in the muscles used in the hop and the association balance activity.

The uneven, changing b e of the trampoline calls for a well developed sense of spatial and body awa. ness as well as good balance skills. Even though the student may never be abie to jump or hop unsupported on the trampoline the assisted forms of these skills on the trampoline are more enjoyable and beneficial to a program of physical-motor development.

In the unsupported phase of hopping the student should be encouraged to perform the skill on either leg. Although the performance on one leg may be easier than the other, it is important for total body development and development of body and spatial awareness for the student to experience this movement on both sides.

In actuality hopping is the same as jumping as far as the force produced in the leg. For this reason the procedures used to introduce and practice jumping may be used simply with the hopping skill. It may be helpful to have the student stand on the leg to be hopped on before performing the hopping movement. This will help to heighten the student's awareness of balance and make the action easier.

(6) HORIZONTAL JUMPING (Jumping for distance).

A variation of basic jumping is jumping in a horizontal plane. The motion is up and out and the entire body is used for the movement. The essential difference between the horizontal jump and the basic jump is the direction of applied force.

The horizontal jump could be said to not follow the definition of a basic skill and should be included in the secondary level skills. However, because it is the first skill which the student is asked to significantly alter an already learned skill it can be included with the basic skills. If removed from the category of jump variations and described as a single low level movement skill, as it actually is, it can easily be included as a basic skill.

As a basic movement skill the horizontal jump can be either very simple or more advanced. The advanced nature of the skill depends upon the effort of the student and the movements included prior to the jump. The simple horizontal jump is done with the legs only, with minimal hip action. The jump for distance, long jump, involves the legs, hip and the arms all working together to propel the body upwards and out. As an athletic event the horizontal jump is proceeded by a run which adds further momentum, directional force to the body preceding the jump.

ASSISTED HORIZONTAL JUMP

Objectives To develop and strengthen the muscles of the legs, trunk and arms, enhance total body coordination and agility, develop a variation of the basic jumping skill, develop body awareness and spatial awareness, enhance self-confidence and self-image.

Equipment None.

Position Student standing erect hands holding the teacher's hands. The teacher is positioned in front of the student.

Action A forceful explosion of effort from the teacher and the student together is necessary for this activity. As the student jumps, the teacher forcefully pulls her forward. Watch the action of the student's feet. As the toes are ready to leave the floor, pull the student toward you. This will effectively change the direction of her jumping force. Encourage her to lean a little forward just before the jump so that she can help you. Repeat this action several times so that the student receives the feel of the movement.

The legs are the most important factor in the jump. Have the student begin in a crouched position or from sitting in a chair, feet flat on the floor. Give assistance as needed and repeat several times so that the student can develop a sense of the leg's movement in the jumping action.

Introduce the use of the arms in this jumping form. The arm's action here is related to their use in the basic jumping action. In the horizontal jumping action the arms are thrown up and out so as to pull the body in this direction. Encourage the student to attempt this action independently even if a jump is not included. The fact that the student is able to feel the changes in the body weight mass when the arms are thrown out is enough at this time.

UNASSISTED HORIZONTAL JUMPING

The objectives remain the same as the assisted activity. The starting position and the action are a little different.

Position The student stands in a semi-crouched position (a half-squat). The hands are held behind the student at the sides. The student is standing on his toes.

Action Following the forceful extension of the arms and hands upward and outward, the student extends the legs and jumps forward. Encourage the student to reach out and pull himself forward.

The deaf-blind or blind student must be made aware of direction in space especially up, down, forward, backward and out. To these students the sensation of the movements is most important. A motor memory of this set of movements needs to be developed, so practice in the correct action is essential. Some aid from the teacher may be needed at first to insure proper performance.

Some concept formation of distance in space can be attempted. Have the student jump out from a wall or other stationary object. Relate the distance jumped to this point and a point on the student's body. (i.e., an arm or leg). Relate a change in effort and the resultant distance jumped by the same means. ("The first time you jumped the length of your arm. This time you jumped the length of your leg, from the floor to your knee"). These explanations can be simplified or related to other objects or measurement instruments depending upon the intelligence and developmental level of the student. For most students the legs are best to relate jumping distance. Tags can be placed on the students trousers or tape placed on the leg to equal the distance jumped on the floor. In this way the student receives some body awareness as well as spatial awareness.

(7) SLIDING

Stepping to the side in either direction is a foreign movement to even a normal child. For any student the practice and execution of this movement seems to enhance the sense of bodily movement and spatial awareness. Its importance lies in the fact that we move mostly in the sagittal plane of the body, either forwards or backwards. Sliding moves sideways in the frontal plane of the body, to the left or right. Primarily a level of the sense of laterality is developed through this movement. The student slides left or right and develops a perception, image and concept of the left and right sides of his body and the movement through space to either of these sides.

If we are to develop a total sense of movement and the total of possible movements which the body is capable we must introduce and develop the siding skill on the basic level. Once a new movement direction becomes part of the student's movement capabilities, the student will be more willing and able to take on the task of new learning in all areas. For the blind and deaf-blind student it will be a necessity to be able to move around obstacles by whatever means is required. The sliding movement skill is then important to the student who is to exist in the normal world.

ASSISTED SLIDING

Objectives — Laterality, develop a variation of movement, further the possibilities of bodily movement, enhance coordination of the legs and arms, spatial awareness, directional awareness, improve self-image and body awareness.

Equipment — None.

Position — The student stands erect, hands at the side. The teacher stands behind or in front of the student.

Action — This is a co-active learning activity. Together the student and teacher step to the side with the lead foot. Second bring the other foot to the lead foot so that the instep of the feet touch. The continuing action is a step-slide-step-slide or slide-slide-slide in the direction of movement. The action should be practiced in both directions, with the left and right foot as lead-foot. If the student has evidenced a preferred foot begin by using this as a lead-foot. More work, in a relative sense, will need to be given for the non-preferred foot than the preferred foot, if there is one. Otherwise work equally with one as with the other. Sidedness will be developed or can be developed by other means. It is not our purpose now to attempt to interject any form of training for sidedness. The expressed objective here is related simply to a basic perception or cognitive of the fact that the body has two sides, a right and a left. No other concepts are applied or intended.

As with the other forms of training in co-action, look for the student to control his own motions. The bodily contact between teacher and student must be continued but should be gradually released to become more sensory stimulation than co-action. Allow the student to move independently a few times to get a total experience of the motion. There should be little or no concern for stability since the student is only widening her base of support and not necessarily moving out of the base of support. To insure this fact, do not allow the student to step more than a few inches at a time, so that the feet are spread no more than shoulder width.

The deaf student without vision difficulties will require the use of co-action as well as the blind or deaf-blind. However, its use will not be necessary for such an extended time as the deaf-blind student. The sensation of the movement is important to all students. The blind and deaf-blind need the extra effort in order to develop the motor memory.

UNASSISTED SLIDING

The objectives remain the same as with the previous activity.

Equipment A line taped on the floor, a rope, ladder or foot placement ladder.

Position The student stands erect, hands at the sides.

Action Without the aid of the teacher, the student steps and slides to one side and continues the action as described in the previous activity. The line or rope may be used as a guide. The teacher may raise the student's hand on their side to point the direction of movement. In this way the teacher can stop the movement and change the direction through gross manual signals. Verbal commands relating "stop", "go", or "right" may be used in conjunction with these signals. The sighted child may be able to follow the teacher as he points to one direction or the other. Make direction changes slow and do not allow the student to cross over his feet.

Encourage the student to take increasingly wider, lengthen, steps when sliding. Encourage variation. One time the student may step with the lead foot and slide the other. Another time he may slide the lead and step the other. Use the ladder and have the student walk through it by moving sideways, picking up the feet alternately. Raise the ladder from the floor 2-3 inches or angle its height, (i.e., from 2 inches to 6 inches) to give other forms of variation. Always encourage the student to think about her movement and what she is doing and how she is relating to the floor or the obstacle over which she is moving.

SECONDARY LEVEL SKILLS

In a general Elementary School Physical Education Program most of the skills already described and those to be included in this section are referred to as basic skills. These are normally a part of each child's skill capabilities around ages 9-12 years. This physical education program is designed for individuals who are both abnormal, as related to a sensory impairment and subnormal intellectually. The intellectual ranges are from low educable retarded to moderately mentally retarded and the severe and profoundly mentally retarded. These persons have the additional handicap of retarded mental development which seems to be closely related to motor development. Therefore the basic level skills may be the most to be expected for these persons. A second level here is presented to include the full range of possible skills which can be learned by the sensory impaired student of any intellectual level.

The secondary level skill is one which may be one distinct movement, but incorporates other factors of physical-motor movement or intellectual concepts which make the skill more complex and therefore more difficult. The essential factor of varience between these terms, basic and secondary skills, is the factor of intelligence. Where basic skills are almost nearly simple physical actions involving some sensation, secondary skills involve conception and perception of the movement. No image of the action or already-learned actions needs to be brought into play and certainly no symbolic presentation of the action is asked for. The student explores the movement capabilities of his body. There is also a small amount of discovery as the student may experiment. No combination is attempted because of the lack of an image of the movement.

Secondary skills will allow the student with the ability to perform them (this ability requiring image formulation and symbolic presentation experiences), the opportunity to select and eventually perform the selected skills under more refined conditions. The objectives of the physical education program progresses from widening the students skills, basic skills, to narrowing down a few skills to be practiced and performed on a higher level of accomplishment.

We say we want the student to develop his highest potential. For some this may be basic level skills, for others it may be the skilled performance of a professional athlete or professional dancer, or an individual who chooses to use his leisure time participating in sports or other physical activities. The level of attainment depends upon the individual. The opportunity to reach this goal should be available to every individual. The secondary level of skills is presented here to fulfill this need and to give the more adept student the strong base in physical-motor skills necessary to move onto the selection and performance stages of motor development.

(1) JUMP FROM A HEIGHT

To jump from a platform above the surface of the floor is more difficult than it sounds or appears. For the deaf-blind or blind student the action of throwing ones body into space to drop an unknown distance is no doubt most frightening. The initial action is simple. What is required is to execute a jump for distance to propel the body from the platform. Following a short flight through space there is a landing. This is the difficult part.

In a sense the student is asking his body, legs and hips in particular, to take more weight, in the form of momentum, than previously taken in a jumping skill. The weight, force, must be absorbed so as not to cause unwarranted pain or injury. Essentially the body becomes a spring. The force is taken first at the toes and ankle joints and progresses upwards to the knee joints, hip joints and the joints and energy absorbing mechanisms of the spinal columns. This is a coordinated movement, a sort of reverse contraction of all the muscles, and must be learned and performed as any other of the movement skills presented here.

ASSISTED JUMP FROM A HEIGHT

Objectives To increase the student's jumping capabilities, increase the strength of legs, hips, and trunk, increase self-confidence and self-image, enhance specified awareness, directional awareness.

Equipment A stair step, low bench, adjustable platform.

Position The student stands on the bench or platform in an erect position. The teacher is standing on the floor holding the student's hands or holding the student's waist, the student's hands on the teacher's shoulders or upper arms.

Action Pre-requisite to this activity is the skill of jumping a distance, a length of at lease one inch or more. Prior to jumping the student should sense the distance to the floor from the platform. Initially this distance should be no more than 2-3 inches.

With the aid of the teacher in take off and landing, the student jumps out from the platform and lands on the floor. The initial landing may be with one foot only (an exaggerated step down). This should be changed to a two-foot take off and landing. The functioning level of the student and the self-confidence possessed by the student will determine the position of the teacher. Initially it will be important to stand in front of the student and pull her slightly to take some of the force of landing by pulling up on the student's arms. The teacher as well as the student should bend the knees slightly upon landing. A student with sufficient self-confidence and trust in the teacher will be able to tolerate the teacher jumping at the student's side, holding the student's hand. This will give the student more of an awareness of the body's action and positions during action as the student senses the movement of the teacher in close proximity. This is not a co-active movement.

Prior to any jump, instruct the student in the force absorbing action of the ankle and knee joints. This part of this jumping skill will appear quite awkward and uncoordinated at first. With practice an efficiency of motion should be developed. The reasons for the correct landing procedure have been discussed earlier. The importance of developing a correct landing skill and the initial use of a low jumping distance cannot be overrated. As the student gains skill and efficiency in landing the height may be raised. As the height is raised significantly, the procedure of assisted jumping may need to be reviewed for each level. This may well be necessary even when the student has gained a level of independence in this skill.

UNASSISTED JUMPING FROM A HEIGHT

The objectives and action remain the same.

Equipment Adjustable platform, benches of various heights, stairs, tables - with adequate support and stability.

Position The student stands erect on the platform. A crouched stand may be taken if desired. In this case the student will take off and land in a crouched position.

The student performs the action without the aid of the teacher or other guides. Be sure the student knows the distance up she will be jumping from. These distances can and should be varied. A sightless student or student with limited vision will need to be able to judge the distance to be jumped in order to execute the landing procedure correctly.

When the height to be jumped exceeds three or four feet or the student has weak ankles, legs or hips, an additional action will be necessary upon landing. This procedure involves a forward roll, shoulder roll, or sideward roll immediately following landing. At this point no more will be said about this because a further discussion of this skill is beyond the scope of this program. It is introduced here for informational purposes only. If the student is capable of jumping from distances which would call for the additional energy absorbtion allowed by the roll upon landing, the teacher should consult another source for this information. At this level of skill there are specific safety aspects which must be considered which are also beyond the scope of this program.

The self-confidence built from the successful, independent performance of this skill by any student cannot be calculated. For the visionally impaired student, the awareness of spatial distances, self-confidence development and skill advancement is well worth the effort of the teacher and the student who is capable of performing this skill.

(2) LEAP

The leap is simply an exaggerated step which includes a jumping type push off by the foot pushing off. The deaf-blind and blind student will rarely use the leap as a mobility skill. But as a skill the ability to leap is a good inclusion in the repertoire of skills possessed by any individual. The leaping skill is more or less a natural extension of the very basic walking skills of stepping. There also are advanced factors of laterality, directionality, spatial awareness, self-confidence, development, stability and balance, and muscle strength development which are called into play in the performance of this skill.

The method of teaching the student is primarily an unassisted activity. What is actually required is much practice and the support and encouragement of the teacher. The action is simply an extended step with a push off which is intended to bring the trailing leg up to the lead leg. The teacher needs to encourage the student to step out increasingly longer distances. This will call into play the necessity to maintain balance in an extended position and following this to shift the body's center of mass the distance to the base of support, with both feet together. The student should be able to do this in a smooth series of movements.

In the initial stages the teacher will have to help the student with the distance of the step and provide some balance support. The student should be instructed to continually lean forward, the direction of movement, by bending at the waist. This will keep the weight mass moving in the direction of movement. Watch to be sure the student does not lean backward when the feet are brought together at the completion of the movement. This will be a common error in the early stages of practice.

As the student progresses, have her attempt leaps of increasing distances. Emphasize the use of the arms in the skill. The arms are used just as they are in the jumping for distance skill. In this case, the arm on the side of the lead leg is thrust forward as the leg steps out. Encourage the student to use both legs alternately as lead legs. This produces an exaggerated walking gait when put into a series of one leap after the other, first left leg, then right leg leading.

(3) VERTICAL JUMP

The vertical jump is a natural extension of the basic jump. Actually the vertical jump is the same as the basic jump except the student is asked to jump up higher than just to have his feet leave the floor. The expectation in the vertical jump is to jump for height and increase the distance jumped. The strength of the legs in particular and the other body parts used in the jump is very highly related positively to the ability to jump for height. The legs then are the most important factor in the vertical jump. For this reason the most important objective of this activity will be to strenghten the muscles of the legs. The secondary objective will be to strenghten the muscles of the other parts of the body, arms, hip and trunk which are used in the jumping action.

A goal or point to surpass is another important factor in this activity. Therefore, the objectives of spatial and directional awareness enhancement are important within this activity. Also when a student seeks and reaches or fails to reach a goal she receives a bit of information relating to her self-image and either increases or decreases self-confidence. The idea of course is to place a goal so that it can be reached and so that self-image and self-confidence, and thus independence, are increased.

The setting of goals requires some equipment. Most likely some chalk, a wall, a step or adjustable platform, some textured markers. These may be used in a number of ways. The individual can attempt to jump to the step or to succeeding heights of the adjustable platform. The chalk can be held in the student's hands and made to mark the height of a jump on the wall to give a point of advancement or a goal to exceed. The textured markers serve the same purpose. They can be placed on the wall to mark the height of a jump which the student is asked to reach or exceed. These are particularly useful for the blind and deaf-blind.

Position — The student stands erect or in a semi-crouched position, arms at the sides.

Action — The student executes the jump as described in the earlier description of the jump. This is not necessarily an assisted activity. But some assistance may be used to develop an understanding of the use of the arms and legs to jump up and reach a point which is beyond the student's reach. This may be necessary for the blind and deaf-blind student.

The use of the legs at the ankle and knee joints must be well developed in order for a good execution of the jump to occur. This is a powerful coordinated action. The forceful extension of the feet and knees is the primary factor in the jump up. Of course do not forget the use of the arms. The student may need to be stimulated to use his arms and legs and motivated to exert the full force of these body parts. A method of motivating the student is hard to describe. What is necessary is to find some factor which will elicit a forceful response from the student. Some drive or maximum effort which is within the student but hard to bring out sometimes. Once this effort has been used and accompanied by the reward of success and praise it is much easier to bring out again.

In my work with dependent handicapped individuals I have found that this factor of effort is usually not present. But if it has been brought out successfully it is a great step forward for the independence of the individual. If possible for nothing else the vertical jump is important for the reason that it may elicit this response which will lead to the furtherance of the student's self-confidence and independence.

(4) RHYTHMICAL HOP (alternating feet).

Incorporating the skill of hopping and the factor of rhythm develops the skill of the rhythmical hop. This skill is a lead-up to the most advanced of the secondary level skills, the skipping movement skill. The rhythmic hop is both an enjoyable and a difficult skill. For the sensory impaired student rhythm and moving in response to a rhythmic stimulus, a drum beat or music is fun and enjoyable. However, if a student has never performed a rhythmic movement, this skill can be most difficult. Also the alternate jumping and hopping can be difficult for the student to learn. However, with patience and effort good, satisfying results are developed.

Objectives To increase the strength and coordination of the legs and arms with associated development of the hip and trunk, develop a rhythmic movement, develop temporal awareness, enhance body image, self-image and self-confidence, increase the variety of movement abilities, promote relaxation in rhythmic movement.

Equipment A drum, record player and records with a definite rhythm imposed (a 2/4 or 4/4 is best).

Position The student is standing on one foot, hands at the side. The teacher may assist by standing behind or in front of the student to provide a co-active movement situation for introductory learning.

Action The student, alone or along with the movement of the teacher, hops first on one leg, one time only, then on the other, one time only. This movement continues alternating legs. This action can be varied any number of ways by changing the number of times the student hops on each foot. For instance the student can be asked to hop two left, two right, one left, two right, two left, one right etc. The hopping pattern can be made to fit the rhythm of the music. A 2/4 rhythm could call for two left, two right or one right, one left for a faster movement, a 3/4 rhythm could be 2 two right, one left or two left, one right.

This series of action begins with the one left one right sequence. It is this sequence which must be mastered before moving onto other variations. The use of music and rhythm is important for the student. These activities may be performed without music or a rhythm, but they lose some of their effect if done this way all the time.

For the deaf and deaf-blind student there will need to be definite rhythmical movement cues which can be followed and imitated. The student can follow the clapping of the teacher or watch as the teacher beats a drum. Ear phones can be placed on the student's ears to help her either hear or feel the vibration of the rhythm. If possible a good bass dial adjustment up and a loud volume on the base or rhythm side of a stereo phonograph will help the deaf or deaf-blind student feel the vibration of the rhythm.

(5) RHYTHMICAL JUMP

Utilizing the previously learned skill of jumping the student will be able to incorporate the factor of rhythm into the movement as in the above hopping skill. The rhythmical jump is performed as is the hop but the two feet jump together in response to a rhythmical cue. This movement can be performed along with almost any rhythm. The student does not have to remain in one place to jump. If possible the student can jump along a line, through obstacles, or around a room in response to music or a rhythm pounded on a drum.

Objectives To increase the students rhythm potential and abilities, increase overall body agility, increase strength of the leg, arm and trunk muscles, increase movement possibilities, improve temporal awareness, spatial awareness, body awareness, directional awareness, enhance self-image and self-confidence.

Equipment Drum, records and record player, blocks, Castanets, other rhythm instruments.

Position The student stands erect, hands at the sides. The teacher may stand in front of or behind the student in close proximity.

Action With or without the aid of the teacher the student jumps in response to the rhythm of the music or the beat of the drum. It will be best to begin with the student jumping in one small area without additional movement. The teacher may jump with the student to help with the introductory learning cues and present movement stimulation in the form of co-active movement. There should be as little physical contact as possible.

As the student becomes more able to respond consistently to the musical rhythm have him jump from one point to another or freely around the room in response to the rhythm. If desired obstacles may be used for the student to jump around or over while maintaining the rhythm imposed by the music Another variation which may prove quite challenging even to the teacher would be to include the rhythmic jumping along with the rhythm hopping. If no appropriate music could be obtained to fit the possible patterns some routine can be worked out by clapping or beating the drum or a combination of both. For instance the student can jump and hop to a 3/4 rhythm one left, one right, jump, one left, jump, one right; one right, jump, jump, one left, jump, jump, etc. These variations may prove to be difficult but with some effort and concentration they can be learned. The student can be only benefited when asked to think and concentrate while moving.

(6) SKIPPING

Skipping is the combination of the rhythmic hopping and the walking skills. The performance of this skill is dependent upon the coordination of the total body to combining the skills into one and to perform the skill as one complex movement skill.

The teacher must recognize that the skip is a difficult skill to learn even for the most advanced student. It is actually three distinct steps each requiring its own separate actions must be made into one. The first is the hop; the

Second is the step forward; the third is the recovery step forward immediately followed by another hop. To further complicate the total action, the feet are alternated and the hop is taken on the foot which has just taken the step (i.e., Right step, hop, left step, hop; right step, hop, left step, hop).

Objectives To increase total body coordination and agility, add variation to the jumping and rhythmic jumping and hopping skills, improve strength of the legs and arms, improve balance, lateral stability, advance the base of movement skills, enhance temporal awareness, directional awareness and sidedness.

Equipment None.

Position The student begins by standing erect, hands at sides.

Action The student raises one leg (right) hopping on the other, (left) then steps out with the raised leg (right). When the body's weight is taken on the lead leg (right) the student then hops on that leg and steps with the other leg, (left) hopping on it. The action continues (right raised, hop left, step right, hop right, step left, hop left, step right, hop right, etc.) Begin by having the student skip in straight lines or through parallel bars without attempting a turn when skipping. Emphasize the use of the arms. The opposite arm is thrust forward and up as the lead leg steps forward and the student hops on it. In other words the cross pattern movement begun in the walking skill is still a part of all locomotor skills.

As stated in activity number four the rhythmic hop is an adequate lead-up skill to skipping. Practice the rhythmic hop several times before attempting the skipping skill. Some co-active movement may be used as a teaching method for skipping but is difficult unless the student is aware of the action, the body parts to be moved and the coordination involved. In this case co-action may be used somewhat like muscle sensory stimulation to present the movement and provide aid in the very early practice times. Remember the coordination and combination of movement between the arms and legs is most important in this skill. Emphasize their combined use to perform the skill correctly.

MOBILITY SKILLS

Mobility can be termed the practical use of locomotor skills most often running and walking. The world outside the school and classroom is an environment filled with uneven walking surfaces and with obstacles which must be overcome in order to locomote, move from place to place. The student must at least have a basic concept of how to move over various surfaces, up and down grades of land or sidewalk, on surfaces which tilt and/or curve. The individual who is to live a normal life in the normal world must be able to negotiate successfully almost any path he is asked to walk. For the sensory impaired person this is a difficult problem.

City streets and sidewalks are filled with a large variety of situations which will arise for the individual who chooses to walk them. Even the yard surrounding the individual's home can be a difficult terrain to negotiate. The three areas of surface variations which will be considered here are the surface gradient, the existence of curves or corners, and the presence of steps up or down. Another area which is possible in the environment but will be considered secondary is the existence of jagged, uneven or irregular surfaces.

The deaf individual should not have much difficulty with mobility skills. The student should be trained to use the senses of vision and kinesthesis to distinguish changes in the surface or other features of the environment. A good introduction to many variations of surface will be appropriate and beneficial for the deaf student. These experiences will effectively enhance the student's movement experience possibilities.

For the blind and deaf-blind the performance of these skills and abilities is most necessary to normalization possibilities in the world outside the school or even within the school. The student should be introduced to variations in surface and changes in walking path as soon as she is able to walk or crawl independently. Although there are at least eight separate skills which are considered part of the area of mobility only one will be considered completely appropriate for this type of a program. The use of arms and hands as sensors and communicators of the environment and obstacles in the environment will be the only skill considered. The other skills will be considered beyond the scope of this program and within the limits of a mobility training program outside the Physical Education program. This section is mainly then for the blind and deaf-blind students but may be used effectively for general movement experiences with any student sensory handicapped or not.

GRADIENT

The gradient is the angle or slope of a surface. The surface is usually considered flat but the grade or slope may be up, down to the left or to the right.

Also these grades may be combined. For example a surface may slope down and to the left or up to the right. This does not suggest curves but the shape of the surface. The surface may be completely irregular and without a definite slope or grade. A prime example of this would be a freshly plowed field. Of course a mat could be considered irregular especially when objects are placed under it to cause lumps or bulges in the surface at irregular spots.

Whatever the grade or slope direction the student must be able to adapt to the surface and move over it with as little difficulty as possible. For the deaf-blind this is almost a totally kinesthetic skill. Of course some balance and locomotor agility are necessary. Whatever vision is present can and should be used to distinguish the grade and slope of the surface being traversed. But for the most part the kinesthetic sense is the most necessary and important sense for both the blind and deaf-blind. These special individuals need to develop a motor memory of the surface and build up a feedback system of all variations of surface. This system can be called upon and the specific motor memory tape can be plugged in to suit the surface or combination of surfaces which may be encountered. For this a great deal of learning experience, both classroom and practical, must be presented.

A series of surface variations must be presented in such a way so as to benefit any child no matter what associative handicaps, physical or mental, are present with the sensory impairment. For the sensory impaired - mentally retarded individual these experiences are of great benefit because it is extremely difficult to get this type of individual acclimated to the normal world in any area of endeavor.

These experiences should be a part of the general classroom program and the specialized physical education - motor development program. Much practical experience is also necessary outside the classroom in the halls of the school building and on the outside on the streets and sidewalks of the city or town.

In general the method of presentation is simple. It may get more complex when dealing with the individuals special needs and the severely and profoundly retarded student. Variations in walking surface can be distinguished, on a very base level, by these individuals and should not be excluded from their program of education or training. The student simply moves over the surface, and with the help of the teacher experiences the feeling and kinesthetic characteristics of the surface. The teacher needs only to convey specific cues relating to these characteristics. For example, the direction of slope; i.e. up, down, left, right, the position of the student's body in relation to the surface gradient, and what position the student should make to adjust to this grade. For the most part connections are made in the feet, ankles, and legs. But they must be sensed in the head.

The blind and deaf-blind student will find it difficult to sense slight changes in the angle of slope. (For a good discussion of this read Movement and Spatial Awareness in Blind Children and Youth, B.J. Cratty, the chapter on Mobility Training, p. 206-218). For this reason an adjustable platform or many platforms of various angles of slope should be introduced and used. The introductory phases should have experiences primarily an angled platforms with very definite slope angles such as 15°-20°. The progression of learning experiences could move from the larger angles to the very fine angles, 1°-2° of slope. Steps at first should be large, 4°-5° between steps. Gradually

the student will be asked to experience and discriminate between increasingly slight changes in slope. Of course, the student's intellectual capacity will affect the degree of discrimination possibilities. A student of normal intellect with training should be able to discriminate very slight changes of slope. The severely intellectually limited student may not be able to distinguish the variance of slope, but this individual should be able to adequately move across a surface with any reasonalble slope or grade variance from a totally flat surface.

This method of presenting learning experiences may also include the use of the tactile sensation of surface gradient from smaller form boards made to represent the platform being walked or any number of grade variances which may be encountered. The form board would be small enough to be hand held and have an angle and direction of slope equaling the platform surfaces. The student may be allowed to feel this board just prior to walking on the larger platform with like slope. The teacher can take this time to introduce the sensation of gradient and present the cues which will be replicated when the student walks on the platform. The student can also carry the board with him while walking on the platform. This will provide an extra stimulus with which to internalize the motor memory and kinesthetic feelings of the platform.

An irregular surface presents a special problem, especially for the totally blind child. To walk a lumpy, jagged surface calls for continual sensation and feedback by the individuals. This call for much concentration and effort on the individuals part. A high degree of balance and body control are necessary. All students should experience irregular surfaces but many may not be able to accept or successfully traverse any form of irregular surface with total independence. Most students should be able to walk an irregular surface with the support of the teacher. Of course the amount of support is dependent upon the student's individual ability.

CURVES AND CORNERS

All paths are not straight. So the individual must be ready to accept and negotiate what turns and deviations from the straight path there may be. Just as the blind person is unable to recognize a slight slope of the surface, the sensation of a gradual curve proves difficult or impossible. For most individuals this may not be considered any problem, just so they are able to stay on the path, sidewalk, no matter what direction it may take. Actually the ability to recognize a curve or the degree of a curve is not important except that it is part of the physical-motor information which the student should be able to experience.

The more important and more frequently encountered, aspect of direction change is the incidence of corners, on buildings, and walls and on sidewalks. The blind and deaf-blind person must be aware of the characteristics of corners and the direction change occurring at a corner. This is mostly an internalized learning factor which will take a good deal of time to present and learn. The more experiences in this area the better for the individual..

The blind or deaf-blind student who is able to assimilate the characteristics of corners and negotiate corners and curves without difficulty is

in a position to accept independent mobility. For the individual who is able to accept this level of experience this is great. For the individual whose intellectual handicap may prevent the acceptance of this level of learning, different expectations need to be set. The mentally retarded student needs only to experience the movement of his body and directional awareness which may come from the experience. More cues in the form of guidance and stimulation will need to be presented along with the experience. Curves and corners are part of the world that the blind and the deaf-blind student will live and move around in. Therefore, these can and must be part of the overall experiences which the student will be introduced during school training.

The presentation of these learning experiences is accomplished the same way that experiences in gradient deviations were presented. The student should be taken regularly around the classroom and the building and allowed to investigate the features of the wall and corners. On the outside the student should be taken to explore sidewalks, buildings of various sizes and shapes and taken for short trips into well traveled sidewalks in the business section of the city or town. The teacher should constantly provide cues to the characteristics of the sidewalks and corners, and the directional changes made when turning a corner. If for nothing else the time away from the classroom and the experience of walking city streets within the community is ample reason to take the student out when ever possible.

Models, both life size and those which can be held in the hand, are also an integral part of the students experience with the outside world. They can be used as associative stimuli while traversing a sidewalk or building wall. A model of a curve will be most helpful in discriminating the shape and variation of the walking path when negotiating a curve.

On the streets and sidewalks of the city or town outside the school, the student will run into the barrier of curbs. These should prove to be no more difficult than stairs except that curbs are of varying heights and often times irregular shapes, sometimes square or rounded. With experience the student should be able to handle curbs with little problem.

It is not the objective of this section on mobility to present a program for total mobility training. This rightly belongs to those persons who are specifically trained to teach the mobility skills which the blind and deaf-blind will need. However, these skills and needs which have been discussed here are general in nature to the ability of the student to use the locomotor skills which are part of this program. They are presented here only as a general part of the total program of training for the sensory impaired student as may be given in the area of Physical Education. It is hoped that their introduction and use will provide a good base for the eventual learning of more normalizing mobility training.

VEERING AND TURNING CHARACTERISTICS

Without being blind or experiencing blindness we find it quite difficult to know what it is like to be without the sense of sight. We use our sight for many more purposes than we sometimes realize. One of these uses of vision is to keep us in a relationship with the environment. We always know where we are in relation to something because we can see it and keep track of our movements in relation to it. The blind and deaf-blind individual is not able

to do this well. For this reason these persons evidence the inability to walk a straight line, veering, or turn in a circle correctly without some form of environmental feed back.

It will be important for the student to have a basic concept of where she is in space. This means that the individual must be able to walk in a reasonably straight line and to know, have a motor-memory of a circle, rotation of the body, and its parts, half-way and one-fourth-way around. Again, the degree to which this concept may be assimilated is dependent upon the students intellectual capacity. The normal, above normal or high educatable retardate should be able to accept these concepts with some teaching and practice. The moderate to profound mentally retarded student will not likely be able to fully realize parts of a circle, body rotation around a central axis, or visualize in the "mind's eye" a straight line and how to walk it. For these low functioning, mentally retarded students these areas are simply another possibility for bodily movement experience. Just because they will not be able to reach a concept of these two facts does not mean that they should not experience this movement and develop the ability to move their body in a straight line, or near to it, and rotate in a circular rotation, more or less.

What is necessary for the training in these two areas of movement are cues which will give the student a relationship to the environment. These can be models, tactual and hand held, tactual lines or circles placed on the floor, parallel bars, or the use of sound cues. The mentally retarded student will need stimuli, (i.e., walking a tactual line on the floor and holding a model with a tactual straight line on it) and additional reinforcements for a full or partial correct performance. Again, for the mentally retarded student, the experience of the movement and the basic ability to perform somewhere near normal is what can and should be expected.

For further information on the concepts of veering, standing rotary movement and gradient variations see Movement and Spatial Awareness in Blind Children and Youth, B. J. Cratty, pp. 63-100.

GENERAL METHODS OF PRESENTATION

As has been stated earlier this program has been designed for the sensory impaired but it is aimed at the mentally retarded, sensory impaired individual. This type of individual proves to be a very special handicapped person. The presence of the mental retardation serves to make the process of training and adaption more difficult, but no less possible. Yes, on a lower level, with lower expectations but still with the overall objective of seeing the student reach his full potential of motor-abilities and total independence.

The methods of presenting these mobility skills must then be geared to the students capabilities and eventual placement in society. Independence is always the one common goal on the mind of the teacher and student. The teaching situation must reflect this consistently. The use of models and tactual and/or auditory stimuli must be adapted and used wisely by the teacher to suit the student. The more stimuli that is present for the student when learning the better. But too many stimuli "cloud the issue" and make it difficult for the student to take in learning cues.

The use of sound can be important to the blind student in relating to the en-

vironment. The blind individual can use sound much like radar, to bounce off objects or to focus on a point in space. However, too much sound stimuli will cause disorientation and make it extremely difficult for the blind student to perform well. These things must always be kept in mind when working with the blind student.

The deaf-blind student should be encouraged to use what hearing and vision is available to her. In the area of mobility this is most important because of the increased need to move around in the normal world. Of course the use of the available senses should be constantly stressed in all phases of the students programming.

MANIPULATION ACTIVITIES

Probably the most easily self-initiating area of movement, manipulation is the control of movement, direction and speed of objects. An object can be held, dropped, carried, handed, rolled, struck, stopped, kicked or thrown. These objects can be a ball, a "frisbie", a wheel, a scooter or the person's own body. For the most part all objects which can be manipulated are objects outside the body. However, body manipulation can be considered a form of object control when performing some tumbling stunts. Those to be considered body manipulation are for the forward backward, and sideward rolls, and the seat, knee, and chest drop on the trampoline. These skills are considered part of the area of manipulation because the person is controling the forceful movement of the body in the performance of the stunt. Walking could also be considered body manipulation and the rolling skills could be considered locomotor movements. The difference lies in the use of the skill, walking is a necessity to normalization. The rolling skills and trampoline stunts are movements which have a usefulness for performance only and are rarely, if ever, used as a means of moving from place to place or a means of life normalization.

There is one form of manipulation which may have both a locomotor and manipulatory description and use. This skill would be the use of a wheelchair, bicycle, tricycle or other similar self-propelled conveyance which would be used to get from one point to another. These objects are used in a locomotor sense but the movements of the body are manipulatory. It may also be said that a certain amount of stability is required to manipulate these objects in order to locomote. Thus we can see the presence of overlapping in the three areas of movement as described earlier. In this section all skills will be described and discussed in the context of the pure manipulatory characteristics of that skill.

Another area of manipulation which may be included as body manipulation is stunts performed on the trapeze, horizontal bar or parallel bars. These are manipulation skills performed with relation to another object, the trapeze or bar. These skills prove to be very beneficial to the sensory impaired student in many areas of learning and development. These learning factors will be discussed further when the appropriate activities are covered.

Manipulation skills are developmental in nature as are all skills. This section will start with the more practical skills which lead up to the manipulation of objects. The earlier skills, which are observable at or before the age of one to one and half years in the normal child, will be covered in the section on early developmental training. The skills in this section on manipulation will be presented in a developmental sequence as they would or should appear in the normal child. In most cases the skills are arranged from easiest to most difficult.

The skills and activities to be presented here will not go beyond the basic skill level, as defined in the locomotion section. The body manipulation and trapeze skills will be considered basic movements for our purposes, although they do not fit the definition of a basic skill.

OBJECT RECOGNITION AND CONTROL

From the very beginning the student should be introduced to and be expected to handle and/or have some recognition of many objects. These objects should be of various shapes and sizes within the ability of the child to handle them. A small child should not be expected to handle large, heavy bricks. Nor should the older child who is capable, be expected to not handle bricks and other heavy objects, as well as light objects, along with objects of varying shapes and sizes.

As a very basic activity, beyond those in the early developmental training section, the student should be experiencing many objects. These objects should be held, handled, explored as the teacher gives cues to their specific characteristics. For the blind and deaf-blind student textured objects may also be used. The deaf student may enjoy objects which make noise or vibrate. The important thing to remember is that the student should be exploring the object. The object does not need to be held, it may be on a table, on the floor or a bench in front of the student. At this point the ability to sense and differentiate objects is most important. When the student has explored sufficiently he is ready to begin the basic control skills.

PICK-UP

Equipment - small balls, trinkets, spoons, cups, small trays or unbreakable plates, blocks, small toys, etc.

The student's first means of actual control of an object is to pick it up. Other early forms of manipulation activities in which the student has participated have exhibited a certain amount of control. But these activities are not necessarily conscious, purposeful control.

The act of picking up an object with the hand or hands is a directed movement which calls for purposeful control in a manipulatory-sense by the student. This movement does not have to include reaching for the object or moving the object following the act. To pick up an object the student simply removes the object from the surface on which it is lying. The removal of the object implies a lift and a suspension of the object from the surface for a period of time.

Most often the hands are thought of in conjunction with the act of picking up objects. The hands, arms, legs, and trunk, in part the whole body can actually be used to pick up an object, depending upon the size of the object. For our purposes the use of the hands, fingers and arms will be sufficient for consideration here. For further information on hand-finger dexterity a good kinesiology text or a book concerned with developmental physical activities will usually discuss dexterity. For now, dexterity is simply fine movement agility or the agility of the hands in particular and the hands and arms in general.

Activity - The student should be seated at a table or a tray which has a few objects on it. The teacher should be positioned in front or behind the student and prepared to manipulate the student's hands. With the aid of

the teacher the student picks up one object at a time, practicing with each object several times. (be sure to use objects of various weights, shapes and sizes). The teacher aids by pressing the object between the student's fingers and palm. This is the earliest form of grasping. Also use the thumb-finger grasp, the thumb-forefinger grasp and grasping larger objects with both hands and lifting with the arms.

The intellectually normal or near normal student should be able to develop these various grasps and pick-up with a little practice following introduction. The blind and deaf-blind student will take a little more time because of the lack of a good visual input. The deaf student should have little difficulty. The subnormal intellectual student will take more time and will require a good deal of training and stimulation.

As the student learns to grasp and pick-up well, have her begin to reach out and pick-up objects. The objects should be placed at points away from her body, but within arms length. Objects which require the use of one hand and objects which need two hands to lift should be used. The blind student should be encouraged to reach out for the objects. The deaf-blind student should be encouraged to look for and reach for the objects. Use objects which are bright and visable. Also be sure there is sufficient light, without unnecessary shadows.

HOLDING

When the student is able to accomplish the grasp and pick-up with little difficulty begin encouraging him to hold the objects. Holding is the extension of picking up the object. To pick-up an object it is raised and suspended for a period of time. To hold, the object is maintained suspended in the student's grasp for a longer period of time. The object may be held with fingers, a hand, hands, or hands and arms, singly or separately.

If a student has the strength and coordination to pick-up an object, holding will be an easy concept to teach. The same objects as for the previous activity will be used. The student is encouraged to keep the object in her hands for a longer period of time. The teacher may need to hold the student's hands to prevent the object from falling or being dropped.

The holding skill should be considered a static, non-movement skill. Therefore, there should not be any movement at this phase of learning. The object is grasped, picked up and held. In later skill activities the object may be moved while holding. On this very basic level there should be nothing to complicate the concentration on holding the object.

CARRY

When the object is held for longer periods of time the student should be able to begin combining bodily movement while holding the object. Of course the size of the object has a lot to do with how the object is carried. We will consider basically objects which are not cumbersome. We will also take it for granted that the student is able to move about adequately.

To carry an object the student, while holding the object, moves from one place to another. The movement may or may not have a purpose relating to

the object being carried. The student does not need to be carrying a book to a table but may just walk or run with an object within what ever limits may be set by the teacher, or from one point or line to another.

Activity

Equipment - Balls and blocks of various sizes, other objects as mentioned in the previous activities.

The student is asked to hold the object and move with it to another point or around the room. It is probably best to set a goal to lengthen the distance and time the object is held and carried. The blind and deaf-blind student may walk to a localized sound or flashing light.

Gradually the student should be expected to carry the ball for increasing distances. The objects to be carried should be changed often.

If the student is physically handicapped to the point where walking is possible, but difficult, or the student is confined to a wheelchair, crutches or braces, assistance may be given. The teacher may help with the walking or push the wheelchair but the holding activity should be done by the student. Other adaptations may also need to be made to compensate for debility of the arm and/or hands. The definition of the holding activities given include the broad use of necessary adaptations. The student should be able to accomplish the task with the maximum use of the involved hands and/or arms and with the least use of outside aid as can be allowed.

PUT OR PLACE

What could be called the ultimate in early manipulation skills is the ability to put or place an object on or in a point or designated area. The accomplishment of this task is the combination of the previously learned manipulation skills. The student picks up an object, holds it, carries it to a point and places it on that point. The ability to put or place involves the use of the hands and arms in conjunction with each other. The eyes or ears are used in coordinated effort with the hands and arms.

The point or area may be a square on a table, the floor or the wall, a box or can, the teacher's hand. Recognize that this skill includes both grasp and release of the object. The student may be asked to touch or points or areas (targets) with the object, but should eventually be asked to place the object and release it. Important objectives in self-awareness and the awareness of others can be accomplished when the student is asked to take from and give objects to another person. Be sure the grasp and release are self-initiated by the student and that the object is purposefully handed and placed so that the person receiving the object may take it easily. This concept will be most important to the early developing deaf-blind student. This is a good way to begin to release the hold of the "I being" from the deaf-blind student.

BASIC MANIPULATION SKILLS

The skills to be presented here are those most often considered in the area of manipulatory skills. These are important to the student in that they are skills calling for movements controlling objects outside the individuals body. In the area of physical-motor development the practice and performance of these skills is necessary to extending the number of possible movement capabilities. In the area of the general development of the individual these skills can open the door to expanding the awareness the student has of himself, other persons, and the environment of which he may be a part. A simple example of this would be when a student explores the environment, a part of this exploration will include handling objects. From this exploration the student is able to discover various facts about the object encountered. If the object can be held and manipulated more can be found out about it than if it can not be manipulated. This manipulatory exploration can also reveal much about the student to the student. The student finds that she is able to lift a spoon but unable to lift a table. The size and weight, shape and other variations of the object are discovered and along with this, the abilities of the student also becomes quite evident. This happening will be occurring throughout the development of the student.

Manipulation will be considered the control of objects. The act of accepting force from an object or giving force to an object is manipulation. The skills are then the basic level skills which are included in the actions which give or receive force to or from objects.

It is one of the main considerations of Physical Education in general and this program in particular to develop within the student a sense of the vast number of movement possibilities and capabilities inherent in the student's body. Manipulation skills are rarely thought of as unique in this sense. Most often the locomotor skills and the skills of balance and gross body control are thought of in this vein. The apt use of the body in skills of manipulation are factors which may be successfully used to give the student an awareness of his possibilities and thus open areas of development which may never have been considered. This statement may seem a little out of line and without evidence to back it up. But the use of adequate learning transfer methods by the teacher can lead to just such an accomplishment by the student.

DROP

The purposeful action of releasing a held object and allowing it to fall will be considered a dropping skill.

Equipment - Balls which bounce-rubber playground balls of all sizes.

Activity - The student is standing or sitting while holding the ball. On command the student releases and drops the ball. The teacher may hold the student's hands and move them to release the ball and catch the ball upon bouncing.

There must be a continual line of communication between the teacher and student. Name the movement and tell what is happening. Drop, throw,

catch and roll are the key words to use to describe the action. The student is already aware of pick up, hold, carry, and put or place. When the ball is dropped, say "drop", "drop the ball", or just "drop". As it bounces, "the ball bounces", or "bounce". When practicing the dropping activity the ball is dropped, bounces and is caught but the teacher should verbally cue "drop" and not "bounce" or "catch".

The student will make the initial movement of releasing the ball and possibly attempt or complete the catch. Use targets on the floor, a box or a marked square in which the student should drop the ball. A sound producing device placed in a box will work well for the blind and deaf-blind student.

CATCH

Continuing on from the previous activity the student will catch the ball as it bounces back in the student's hands. A catch will be considered absorbing the movement force of the object so that it is stopped and held. The teacher will need to hold the student's hands or arms, above the wrist to aid with catching at first. The movement skills included are similar to those used in the put or place activity. Eye-hand coordination or ear-hand sound localization are the most important factors in this skill. The student will need to be able to reach or move her hands to the ball and move to stop its action at the proper times.

The blind student will have particular difficulty with this skill and the other catching skills to be presented due to the lack of visual stimuli. More cues to give the location of the ball or object and when the catching movement should be initiated will need to given. Two or more teachers and/or aides may be necessary. Vocal cues should come from only one person during the training periods. A sound producing ball such as the sound balls available from Bell Laboratories. The ball is held by the teacher at the point where the movement to catch it should be started.

Allow the student to localize on the sound and to get a sensory memory of the distance from his body. Practice bouncing the ball and cue the student when the ball reaches the point for initiation of movement. Have him reach out and attempt a catch; the ball need not be caught. The teacher may help direct the student's hands to the ball and with the catching action in order to present the timing and coordination which is necessary.

Activity - If the above method does not work or proves too difficult use the bounce of the ball as the cue for movement. The student times her movement to catch to the sound of the ball when it bounces in the surface. Again some assistance and practice will be necessary to learn the timing and coordination necessary.

With this and the other method the teacher can verbally cue by saying "catch" to start the movement. This may be sufficient for the blind student but may prove to be too many stimuli at one time and cause frustration rather than learning. If this becomes the case, lessen the stimuli.

BOUNCE

A ball is bounced when force is applied to it before it is released. The action

of bouncing is when the ball strikes the floor and rebounds. When the student initiates the force on the ball, over and above the force of gravity this is bouncing in a manipulatory sense. A ball can be bounced on the floor, a wall, a ceiling or any other stable object or surface. For our purposes a bounce will be considered only when the ball is pushed to the floor and caused to bounce by the force which the student applies to it. In this sense the bounce will be considered an extension of the dropping skill, or a drop with force applied.

Activity - With the aid of the teacher or independently the student pushes the ball to the floor. The ball may be caught, but does not need to be at this time. This is a separate skill because of the increased speed of movement and coordination required to bounce and catch the ball. The verbal cue is "bounce" and emphasis should be placed on the amount of force applied. The student should bounce the ball so that its return can be timed to make the eventual catch easier. Allow the student the opportunity to experiment with and investigate what happens when the force of the bounce is increased or lessened. Emphasize the student's awareness on what effect her force application has on the ball. Show the student how she is manipulating the ball and controlling its speed and direction.

BOUNCE AND CATCH

The force applied to a ball will effect the movement and timing of the student. The ball may be caught as it is moving up after the bounce or after it has reached its apex of flight and is dropping. The student should be aware of these things and attempt to control the bounce so that the ball is easily caught. The student who is able to coordinate both the bounce and the catch has achieved a high level of self-control and self-awareness as well as a good understanding of things outside of himself and the effect he can have on certain objects in the environment.

Activity - The learning practice for bouncing and catching is the same as with the drop and catch except that the student is actually controlling the entire action sequence from bounce to catch. Practice should emphasize timing, coordination and the student's control of the ball.

ROLL

Almost any object of any size may roll. The ball is probably the easiest object to roll, so its use will be considered mandatory in this skill activity. An object is considered to be rolling when, from a standing position, force is applied to the object causing it to move across a surface. The object should not leave the surface at any time. When an object is rolling it must maintain continuous contact with the surface. When it leaves the surface it is considered a bounce.

Equipment - Balls of various sizes - small playground balls to large cage balls.

Activity - In a seated position, the student is directed to, or with hands manipulated, roll the ball on the floor. For the blind or deaf-blind stu-

dent the sound ball will be important for the perception of caused movement. The concept of "push" may need to be described to the student at this time. In any case the method of pushing so that there is no lift on the ball should be presented.

The student is holding the ball with both hands, palms and fingers touching the ball. A ball small enough to manipulate easily yet big enough to hold with both hands should be used. (a 9-12" playground ball is satisfactory). The student pushes with the directed force of the arms and hands, maintaining contact with the ball through approximately one-quarter turn of the ball, or the extent of the student's reach, which ever happens first. This is a follow-through action where contact is continued until the last possible point of release. The direction of force is out, away from the body, and down, the direction of the roll of the ball. The action of the arms, and hands in particular describes an arc equal to the arc of the ball on which hand contact is maintained.

All of this action is so that the students manipulatory force is exerted throughout the longest possible time. This, of course, is not always possible or necessary. A small tap of the finger could start the ball rolling. But the idea is to have the student provide the manipulatory action to the maximum extent so that the student develops a sense of control and his full effect on the ball.

In the beginning the ball may be rolled to a person directly in front of the student. This person sits with legs spread so that there is little chance for error. This person should provide a sound source for the blind or deaf-blind student. As the student gains control of the skill the person, target, may move to one side of the student. In most cases the student will need to face the target in order to roll it properly. A good deal of training in sound localization for the deaf-blind, blind or even the deaf student is possible here. When the target moves, then provides the sound source the student must respond to it by turning and rolling the ball to the target.

Activity - Roll To Catch - The skill of catching the ball, or actually trapping, can be presented easily at this point. The student simply receives the ball when it is rolled to her. She should be sitting in the spread-leg position so that the ball is funneled to her hands. The teacher can make it easy or hard for the student by the way the teacher rolls the ball. Of course, at first the ball should be rolled directly to the student's hands. But as time goes on the student may be asked to reach to either side of or in front of her body to catch or stop the ball as it rolls. This activity may be done in the sitting, kneeling or standing positions. The position will determine the range which the student will be expected to cover.

As the student's skill increases, targets of various sizes may be used. Boxes, barrels, targets marked on the wall, etc. may be used effectively. Under these circumstances a sound source, the teacher's clapping, a bell or buzzer, or other form of continuous or intermittent sound source placed on or near the target will be necessary for the blind or deaf-blind student. For the deaf-blind and deaf student additional visual stimuli such as a bright or flashing light, or bright colored outlines may be used to describe the target. This is particularly recommended for the deaf-blind student so that both senses are used to localize the target's position.

TWO-HAND TOSS (Underhand)

It may be argued, and rightly so, that some other manner of throwing is the more basic developmental step of throwing objects. But, without regard to these arguments if there be any, this program will strike out and state that the underhand toss or throw is the most basic developmentally, and the easiest to learn. This would mean that the other two throwing skills to be presented here, the two-hand over head throw and the two hand push throw, will naturally follow the developmental succession of the underhand throwing skill. The one-hand form of these skills, in particular the overhand and underhand throws, will be left out because they are not necessarily considered basic level skills, and their progression easily follows the attainment of the similar two-hand skills.

The underhand toss will be considered here first because it should logically and, I believe, developmentally, come before any other throwing skill. First of all the underhand throw is a more natural movement of the arm and shoulder joints. When the hands are positioned with palms up, supinated in the anatomical position, the bones and joints of the lower arm and upper arm are at the open position, providing the most efficient flow of motion through the joint of the elbow. The shoulder joint at the head of the upper arm (humerus) is also positioned so that its movement is least restricted by the bones and muscles surrounding it. Secondly, the muscles of the arm and shoulders, used in the throwing action, are positioned for best and most efficient use when the arm and hand are in this "open" position. Also in this position more muscles of the arm and hand can be called into play and they may be used to their maximum possible effort. Thirdly, the type of lever (third class) and the length of the lever arm (distance from the point of effort to the point of resistance) is most conducive to an efficient movement with the least effort on the part of the student.

The most efficient and most naturally occurring movement of the arm would seem the most easiest to develop in a learning situation. The normal individual walks usually with palms facing in toward the body, and the arms swinging easily and loosely in this position. This would then seem to be the most natural position for motion of the arm and shoulders. For this reason and the others given above the two-handed under arm toss will be presented here as the first step in developmental sequencing of the throwing skill. It will be assumed that as soon as the student is able to understand the concept of the throwing the other forms of throwing, overhand and push, can be introduced and learned along with the underhand toss. By this way the student learns three means of throwing almost simultaneously, and the simplest throwing form is used to introduce the concept of throwing. This concept is important especially to the blind student, who has no visual model for the action and force needed for the throw. This is an exertion of force and power which may not have been experienced prior to the introduction and practice of these throwing actions.

Equipment - Playground balls (9-12 " balls are most appropriate).

Activity - The teacher and student stand together, teacher behind the student. An aide or volunteer may be necessary to help with this activity. With the co-active help of the teacher, the student practices the underhand throw movement. This should be done several times without the ball, then with the ball several times. The teacher holds the student's wrists or hands

and manipulates the underhand arm swing. Start with the student's hands placed at her waist, the palms of the hands facing in and 9-12 inches apart as if holding a ball. The hands swing out and up in an arc starting at the hips and ending just after the release of the ball. When practicing without the ball or with the ball co-actively, the teacher should slightly outwardly rotate the hands, bringing the little fingers together, at the point where the ball would be released. After the release of the ball the hands and arms should continue their swinging motion up to shoulder level.

Practice of this skill should continue up to the point where the student self-initiates and carries through with the initial throwing motion. Of course, continual review of co-active practice will be necessary up to the time when the student is able to perform the entire skill without aid. The method of reqarding attempts and near attempts at correct motion while performing co-actively or not is a necessary process with this skill and most of the other throwing skills. The teacher will reward, praise or otherwise, any appropriate motion toward throwing correctly that the student makes. This is immediately followed by the co-active performance of the remainder of the skill activity.

From the beginning a target of some type should be used. This does not imply that the student will be expected to aim for or even hit the target. The idea here is that the student is able to sense some cause and effect reasoning for the throwing motion and this also provides a base recognition of a target for later use when the student will be expected to hit targets of varying sizes. The ball can be thrown at a wall or to another person, an aide or volunteer. The ball may be returned to the student or he may catch it from the rebound or throw-back. The catch is not important at this time and should be referred to only as a factor and not as a skill to be considered at this time. See the drop and catch activity further explanation of the place of the catching skill.

TWO HAND TOSS (Overhand)

The appearance and movement of the overhand throw is exactly opposite that of the underhand. The ball is held above the head and the throw is directed out away from the body. The movement of the arms is out and down toward the body. In the beginning the student will more than likely throw the ball out and down. However, with the overhand movement there are more possible directions in which the ball can be thrown. The initial direction can be directed upwards, downwards or almost any angle of flight inbetween allowing the release. This would be one of the characteristics of the overhand throw which would make it more useful to the student than the two-hand underhand toss. The greater range of motion of the arms is the reason for this difference and greater variety of throwing possibilities. This becomes important to the student who is asked to hit targets at various distances and those which may be above, below the shoulders, to the left, or right of the body.

Equipment - Playground balls (9-12 inch sizes are best).

Activity - The methods and general procedures remain much the same as with the underhand toss. The differences to the student and teacher arise with the possibilities of movement and the increased motor coordination and skill required to perform this skill. This must be recognized by the teacher and communicated to the student.

Begin with co-active motion, without the ball. The teacher stands behind the student holding the student's wrists. The student hands hold the ball with palms facing in. Practice the overhand motion beginning from above the head, arms slightly extended, elbows slightly flexed. The arm action is outward and downward away from the body, when the ball is released the arms and hands continue toward the body, in a follow through motion. As the ball is released the hands rotate outwards, bringing the thumbs together. The teacher manipulates or guides the student's movement throughout several times with or without the ball.

Encourage independent movement and praise partial or beginning movements by the appropriate means. Targets are again important for the first trials as well as when controlled direction is required. Use a target which is at about head or shoulder level. Although a target at arms length height may also be used. Always remember that the ultimate goal is to have the student be able to accurately hit targets at heights above and below the head as well as to the right and left of the body using the overhand toss.

PUSH TOSS

To hold the ball at chest level and push it away from the body by forcefully extending the arms is commonly referred to as a chest pass. It is an often used skill but seldom recognized as a definite skill which can be learned. Its importance to the individual lies partially in this fact. It is not usually considered because it is not an easy swinging motion of the hands and arms and therefore not simply taught in a relative sense. A totally new concept, possibly, of "push" must be introduced and learned. The implications of course are visable when the push action is realized. The conotation of pushing other persons or pushing object out of the way is sometimes quite negative and not considered the kind of learning we would want to have the student-child learn.

When the part of the student's total development is considered and the basic importance to the student of the total or most widely applicable motor development is brought to light the development or lack of presentation by the teacher of a simple skill can be a great loss. To limit a student's capabilities because a skill may hold some derogatory factors is to check the student, and a disregard for the total learning which we as teachers are attempting to provide for the student. If we as teachers cannot present and teach a skill and not limit its negative factors, while expressing its positive points to the student we are indeed poor teachers and unworthy of our position.

Getting back to the skill description.

Equipment - Playground Balls (9-12 inches in diameter).

Activity - The teacher stands behind the student holding the students wrists. Co-actively practice the pushing motion without the ball a few times. The students palms face in and at a distance apart to simulate holding the ball. The student's hands are forced out, away from her body at about chest height, the hands rotate inward, thumbs coming together,

as the ball is released. The arms are fully extended and there is no follow through as such.

Keep up a line of communication with the student. Name movements and actions (keep these consistent when used). Point out body parts and their movement. Point out balls and the difference in sizes. For the blind and deaf-blind student use balls of various textrues and talk about the differences and similarities.

When the student has gained some skill in these throwing skills use balls of different sizes and weights. This will make the student aware of the specific differences and what his body must do to compensate for these differences. Also introduce objects of shapes, other than that of a ball. Bricks, boxes, unbreakable toys are good items for throwing exploration. The use of these items is not to encourage deviant or destructive behavior but to allow the student a normal set of exploration experiences. In actuality the more severely retarded student will require this designed form of experiences. The student of normal intellect will probably discover these things for himself without direction.

BASKET CATCH

For the visually sensory impaired student the act of catching objects will be a most difficult, although possible, manipulation skill. Catching entails the absorption of force from an object. To catch an object the force and motion of that object must be halted. This requires what may seem to be less physical-motor ability than other manipulation skills. But the actions which will be described here are similar in difficulty to the other manipulation skills. For the most part the actions required prior to catching, moving body parts to the object, are the most significant actions of these skills.

It may be necessary to return to the practice of the bounce and catch, and roll and catch from roll skills as preliminary activities to this. Emphasize the catching actions of these skills. Point out how the hands stop and hold the ball. Use balls of all sizes to increase stimulation and experience.

Equipment - Playground balls (9-12" diameter).

Activity - Use the preliminary skills described above to review and stimulate necessary learning. The basket catch is a combined use of the arms, hands and body, trunk, to stop and hold the ball. The teacher should be positioned behind the student, holding the student's wrists so as to control the action of the arms and hands as well as the trunk.

In a sitting or kneeling position with the teacher behind her, the student stands ready to accept the ball thrown in her direction. An aide or volunteer stands directly in front of the student holding a ball. This person bounces the ball so that it rolls and bounces or so that it has a low bounce, to the student so that the ball reaches the student at or below the waist while kneeling. With the co-active aid of the teacher the student reaches, stops and holds the ball. Both hands are used as a "scoop" so that the ball is directed to the student's body. Simultaneously the student brings her hands toward her body so as to surround and hold

the ball with hands and arms. The teacher's aid is to help with the coordination of movement and to direct the students hands to the ball. It is important that the aide throwing or rolling the ball be accurate and consistent, especially in the early practice experiences. This is so that the student can begin to expect the ball at a certain spot and therefore develops coordination and independence much more easily. The visually impaired student should be encouraged to listen for a bounce of the ball and to time movements to this. The use of a sound ball is important here. But the basic learning of the student should be in relation to a bounce prior to catching.

When the student begins to gain some independent movement in the kneeling position have him stand and catch the ball. Use co-active movement or stimulation as needed. Do not vary the height of the bounce or direction from which the ball is thrown.

Activity - A second, more advanced form of the basket catch is the two-hand catch. The ball is caught at about chest height or in the area of the trunk. The hands stop and hold the ball and the arms recoil, and flex, accepting the force of the ball. The important facet of this skill is the action of stooping and holding of the hands. Do not allow the student to simply stop the ball with flat hands. In this way the ball is reflected off the hands and little manipulatory action takes place.

A co-action movement is necessary here to help the student learn to stop and hold the ball with the hands. Holding the student's wrists, the teacher manipulates the students hands to catch and hold the ball. A good review of the bounce and catch skill is helpful here to stimulate control of the ball with the hands. The ability to catch the ball by use of the hands is important to the development of the next two skill activities.

CATCH (under, below waist).

When a ball bounces so low so as not to reach the waist the student will need to place the hands in a position to catch the ball below the waist. This usually involves bending at the waist and reaching down with the hands and arms. Unless the blind or deaf-blind student is able to distinguish the force and direction of rebound from the sound of the bounce some communication between teacher and student will be necessary. For ease of description and quickness of reaction one-word directions are best used. Words such as high, low, under or above should be consistently used to describe the expected flight of the ball.

Activity - The teacher again stands behind the student holding her wrists. The teacher should also be able to direct the movement of the student's trunk so that she bends to reach the ball. The aide bounces the ball to the student so that it reaches the student at or about knee level. The student bends and reaches for the ball stopping and holding it with the hands only. The force can be absorbed by allowing the arms to swing through the student's straddled legs.

Tell the student that the ball is going to bounce to his knees and be consistent with the bounce. The aide should also say "low", to describe the flight of the ball. Encourage the deaf-blind or deaf student with normal vision to watch the flight of the ball and react to it.

CATCH (over, above the head)

Just as the ball may bounce below the waist at trunk level it may bounce above the student's head. This requires a movement of the arms and hands to a point above the head to catch the ball.

Activity - With the help of the teacher, the student reaches up above the head to catch the ball. This should again be in response to a bounce of the ball and the direction of the teacher. The flight of the ball is described as "high" or "above". The ball is stopped and held with the hands and the force is accepted by the arms as they swing back. The movement of the arms are somewhat limited above the head so a stronger stopping and holding action of the hands will be required.

Use balls of differenct sizes and weights. Always communicate the direction of flight to the visually impaired student. When some skill is gained in all three types of catches vary the direction from where the ball is thrown and the height of the bounce. The deaf student should also be able to accept a ball thrown without a bounce. A sound ball should be used when throwing without a bounce to the blind or deaf-blind student.

KICK

The use of the feet and legs for specific physical-motor skills is little heard of in this country. A punter or place kicker in football are the nearest we have to persons skilled in foot-leg skills. However, soccer is becoming a more popular sport in the U.S., so there is hope for using the legs for something other than walking and kicking. The implication here is not to promote sports in this program. It is simply a general statement concerning the use of the legs in physical activity. A statement which shows how little we use our total body as it should be. We lack much in understanding and experiencing the sum of movement possibilities of the physical body. It is, of course, one objective of this program to allow the student to discover these possibilities.

Kicking, an object is a striking action where the foot forcefully contacts an object, propelling it in the direction of applied force. The object may be struck by any point on the foot. Usually the toe or the heal are the striking points. Force is obtained by swinging the entire leg back then forward to the object. Force and movement came from the muscles of the hip, knee and ankle and are coordinated in that order.

Equipment - Playground balls (9-12 in diameter).

Activity - The practice and learning of the kick should be presented much the same as with the throwing skills. A target should be used throughout all the learning phases. Only when some control is developed will the student be asked to become consistent at hitting a target. The target size should be 1½ - 2 feet square and not more than 1-2 inches from the floor. The best position is on a wall at the lowest point with one side being the floor.

The student is seated in a chair with feet on the floor. The teacher stands to one side of the student. Swing the student's leg a few times easily bend-

ing at the knee and keeping the foot held straight (dorsi-flexed). Place a ball on the floor directly in front of the student on the side of his preferred foot. Both feet will be practiced, so that if there is no preferred foot, use one for a few times then the other. A student who has preference for the use of one foot over the other will learn easier if the preferred foot is practiced more than the non-preferred foot. However it is necessary and beneficial to practice and be able to use both feet for kicking even though one may not always be as good as the other.

With the help of the teacher manipulating the lower leg only, the student kicks the ball. The ball should be kicked several times as the teacher repeats the word "kick". This seated practice is to develop the idea of using the leg and foot to strike an object and to get the feel of the primary action. After the student has practiced 2-3 times with each foot have her stand and begin the second activity. Return often to this activity to review the idea of kicking and the movement involved.

Activity - The student is standing with the ball placed at her feet. The teacher stands directly behind the student. A second person, volunteer or aide, may be needed to help with directions and retrieving the ball. Co-actively the teacher helps the student with the kicking action. If desirable and if the teacher is physically capable the leg of the teacher may be strapped to the student lightly at the ankle and the mid thigh. The teacher may also stand very close to the student with the leg contacting the kicking leg of the student. The teacher holds the student's waist. This is to give the student an idea of the shift of weight which is required in order to free the kicking leg so that it may swing without bearing weight.

Which ever method of co-action is used the teacher executes the action with the student. The teacher's instep is placed behind the student's heal so that the kicking-out may be controlled. Begin by freely swinging the entire leg at the hip. After a few times add the motion of the knee. With these two actions integrated the ball is then placed at the student's feet and kicked several times with the co-active aid of the teacher. Emphasize the shift of weight to the non-kicking leg, the swing of the hip and the forceful extension of the lower leg just before the ball is kicked.

Although it does not make much difference in the beginning where on the ball the foot strikes, gradually encourage the student to strike the ball around the center of the ball's surface nearest the student. This becomes more important as the student is asked to exert more control by hitting targets at different distances and of varying sizes. Use a ball which has a sound and/or a light source to help with recognition and direction. Give targets a sound and/or a light source for the blind or deaf-blind student to more easily direct the ball to a target.

TRAP

When a ball is caught with the foot we can say that it was trapped. The definition for catch will be broadened because the foot and lower leg lack the fine control inherent in the hand and arm to catch and hold a ball. Although a ball may be stopped and held to the ground

with the foot this is not always possible, even with the most skilled performer. So definitively we will say that a trap is when the ball is stopped, the movement of the ball is caused to cease, by the absorption of force by the leg and/or foot. The leg and/or foot get into the path of flight of the ball and ceases its motion in one direction. After motion stops the ball may be held or rebound in another direction from the leg.

Equipment - Playground balls (9-12 inches in diameter).

A ball or can filled with rocks or bells.

Activity - A ball may be stopped or trapped with either one or both legs. To begin with the student will be asked to trap with two legs. This requires that the student place his body in front of a low flying or bouncing ball. When one leg is used more range of movement is possible and quicker movement much easier.

As with the other skills presented a co-active method of presentation is used to help the student perform and learn the skill. The action here at first is inaction. The student stands and stops a ball which is rolled to her. This involves nothing more for the student than standing and allowing the ball to strike her legs. The teacher stands behind the student to keep up communication with the student. The student should be stimulated to recognize what effect, control, she is having on the ball. Make the student aware of her legs as they relate to the ball and the part her legs are taking in stopping the motion of the ball.

When the student has developed this sense of awareness and control the ball or can as suggested for sound output, should be rolled to one side of the student, not more than a steps distance from the student. When the ball is rolled the student, in response to the visual or auditory stimulus, steps to the side and stops the ball by placing his body in the path of the ball. This should be repeated several times to each side. Be aware that the student will have difficulty co-ordinating the movement of his body to the movement of the ball. The main difficulty here will be speed of movement. Attempt to time the speed of the roll to the speed of movement of the student so the possibility of failure is lessened.

The teacher is standing behind the student and co-actively moves with the student to get her body to the ball. It may help to loosely strap the teacher's legs to the student's because of the importance of the leg movement and placement. The deaf-blind or deaf student should be encouraged to keep visual contact with the ball up to the time it is stopped.

When one leg is used to trap a ball the surface area presented is important. Two positions will be considered here. These are the instep of the foot and the sole of the foot. These are the two largest areas available to stop a rolling or bouncing ball with one leg. The instep is used to stop a ball on one side of the student's body. For this the leg is rotated outward so as to place the instep in the path of the ball. The ball contacts the foot and force can be taken by allowing the leg to swing back slightly. The body's weight is taken on the opposite leg as this skill is performed.

A ball may be stopped by the sole of the foot when the body is placed directly in the path of the ball. The leg is raised and the foot flexed to point up (dorsi-flexed) so that contact with the ball is made on the arch of the foot or between the ball of the foot and the arch. The body's weight is taken on the opposite leg. Force of the ball is taken by slightly flexing at the knee after contact.

When practicing either form of the one-foot trap practice several times with each foot. The preferred foot, if there is one, will be the easiest for the student. Make the roll or bounce of the ball as consistent as possible and keep up communication with the student. Encourage all efforts and keep the student's awareness of the control of the legs. Remember, that when the legs are used and the body's weight must be shifted to perform a skill there must be a great deal of control exerted over the total body's movement as well as the performing body segment, the legs.

BODY MANIPULATION

To control and direct the movements of the body is in essence the pervading objective of this entire program. Each skill to be learned requires the control of a body part or parts to perform the skill adequately. There are a set of skills which do not adequately fit the total definition of locomotion or stability. These skills overlap in both of these context areas. The actual movement and force of the performance of this skill is distinctly manipulation.

If we say that the body is an object with the characteristics of objects which may receive and give force, we can then take the premise that this object, the body, may be struck, pushed, rolled, thrown, in a sense, to present force, partially or in total, may be within the body itself or outside the body. In this case we cannot and will not describe a location of the initiation of the force. The source of the force applied to an object has little or nothing to do with the fact that its total movement is being controlled in the performance of a skill.

Body manipulation is the control of the body in the performance of a skill where the body is both the initiator of the force applied (manipulation) and the object of the manipulatory effort. The student thrusts, catches, or kicks a ball. A manipulatory effort is being exerted over the ball by the student. When the student performs a forward roll, a log roll, or a seat drop on the trampoline, the body of the student is being manipulated, controlled, and directed, in the performance of a skill as is the ball when it is thrown, caught, or kicked. Force is being applied to or received by the body by the controlled direction of the student's body itself. The student applies force to or receives force from his own body to perform a skill of manipulatory nature.

Walking, crawling, locomotor rolling, standing are all skills where the body manipulates itself. These are strictly defined as locomotor or stability skills and their basic nature is for the purpose of locomoting or remaining stable. However, the basic purpose of the simple skills to be described here is for the performance of the skill and the control of the body. Their purpose lies not in a useful way in locomotion or stability but in the performance of a manipulation skill. This is the reason for their labeling as manipulation skills and not as one of the other content areas. The specific differences and similarities will be related later when the skills are described and discussed.

The skills to be included here as body manipulation skills are skills which are performed are one of three environmental surfaces. The trampoline, the mat for tumbling skills, and the horizontal bar or trapeze are the surfaces to be used. On these surfaces the body will be moved over or around. The skills presented will be basic in nature. Their presentation is specifically to allow the student to develop an increased awareness of the control the student has over his body. By doing this it

is intended that the student will develop a more thorough control of his body. The movement skills are of a very gross nature, involving the whole body or large parts of it in the movement performance. It is realized that these skills may be made more complex and difficult and there are other closely related skills which could be included here. This program will not go beyond what is presented in order to maintain its objective purpose of programming for basic Physical Education of sensory-impaired and mentally handicapped students. If a student is capable of performing skills beyond those presented, by all means, go beyond this. The same, similar, methods may be used effectively to teach higher skills as are described here. Remember that a student who is able to perform skills above those presented here is more than likely of normal or near-normal intelligence and the methods will actually be slightly different.

TRAMPOLINE BOUNCING STUNTS

The action of bouncing and being bounced is a stimulating venture in movement experience. We will go into this facet of movement stimulation on the trampoline in a later section of this program which will be concerned with general movement and sensory stimulation. At this time we will deal with the fundamental stunts from the trampoline. Three stunts will be presented following the simple jump. These are the "seat drop", "knee drop", and "chest drop". Another "drop" stunt which could be considered, but will not be, is the "back drop". It is a natural opposite to the "chest drop" but is too difficult and dangerous to teach to the type of student we are attempting to reach through this program.

This exception of the "back drop" is not because it would not be acceptable for presentation to a sensory impaired student. The multiply handicapped mentally retarded student would find this stunt most frightening and the danger of injury to the neck is too high to be included in this selection of stunts. However, if the student is willing and capable and the teacher is knowledgeable in control and presentation methods, the "back drop" can and should be used successfully as a part of the student's Physical Education program. The suggestion here is that this stunt is not recommended for severely and profoundly mentally retarded students and for multiply handicapped students.

The "seat drop", "knee drop", "chest drop", and "back drop", if used, are stunts which require movement of the body in four directions within one plane. While facing in one general direction the student can jump and land on his seat-buttocks, knees, chest, or back, mostly through the movement directly or indirectly of the legs. The body action is a whole, gross body movement. The legs initiate the movement and are responsible for most of the force of the continued movement and return to the standing position. The movement of the legs should be emphasized but remember that the whole body is involved in the skill.

In order to be able to perform a trampoline stunt the student must first be able to jump on the tramp and control her movement without bouncing all over the tramp. The student should be able to jump within a 1-1½ foot square consistently without jumping out of it. All of the stunts should also be performed within the general area of the square.

When the student is able to keep within the body of the square while jumping, he is ready to begin practice of the stunts.

Activity - A student who is able to stand unsupported and walk with some support is able to get up on the trampoline and begin jumping. If the teacher needs to co-actively jump with the student, there is no immediate reason to believe that assisted jumping is possible when some independence and stability is present.

The teacher stands on the trampoline with the student. Teacher and student are facing and holding hands. The teacher provides support and stability much as would be provided while walking a beam. Two methods are possible here. If the student is able to jump with some control the teacher stands, absorbing the bounces as the student jumps independently, holding the teacher's hands. If the student is unable to jump independently, the student jumps under the control of the teacher. The teacher applies force downwards on the tramp. The rebound of the tramp should carry the student and teacher upwards. Begin first with bouncing, where the feet do not leave the tramp bed. This is to give the student the feel of the up and down movement. Progress to jumping where the feet leave the surface. To accomplish this the teacher applies more downward force on the jump. It will be of help to the teacher to have practiced this technique with a skilled student before using it with a student who is less skilled.

Trampoline stunts are manipulation skills. However, remember that the trampoline is also manipulating the student's body. The trampoline bed is moving down and up in response to the force applied by the student and teacher. The upward rebound of the trampoline bed and springs is an action-reaction force which carries the student's body upward, then absorbs the force of the body as it lands. Because of the action of these two force producing and accepting factors, the body and the trampoline, the student needs to control, manipulate, both the trampoline and his own body. This is a unique factor of skill development which is provided by the trampoline.

As the student gains skills and has gained some independence and control a spotting belt with rope may be used to insure the student's safety and help with support. Also aides, volunteers or other students may act as spotters on the side of the trampoline, at least one on each side. The blind student will need extra help and encouragement in order to stay in the middle of the trampoline bed. A sound source, a constant sound, buzzer or bell, etc., or the voice of the teacher standing at or near the middle point of the trampoline bed. She should become quite familiar with the bounce at center and be able to distinguish slight variances of spring.

Of course, complete independence and control are the necessary objectives to reach. When these have been met begin the progressions of the stunts.

SEAT DROP

Activity - In all three of the trampoline stunts communication is important. Through the use of co-active movement, vocal stimuli, or signs given along with the performance of the stunt the student can be led into an independent performance. A name, "seat drop", the sign for "sit" is used so that the student relates the name to the action. Relating name to action is an integral part of Special Physical Education but is most evident here because of the distance between teacher and student imposed by the trampoline when the student performs independently. When the teacher is standing on the floor and the student is on the trampoline it is difficult for the teacher to present anything other than verbal or manual sign stimuli. Under these conditions the student needs to have a recognizable command to follow.

Two methods of presentation are possible for a beginning or introduction to the seat Drop. Both methods involve imitation. The first is co-action, the second is model imitation. With co-action, the teacher stands behind the student holding the student's hands, with contact on the student's elbows and legs. This is most useful for blind students and students who have difficulty with body image and recognition of body parts. The more severely retarded individual will certainly require this method of presentation. It will be of help for the child who is not blind to watch a teacher or aide perform the stunt prior to the student's attempt so that an image of the whole action can be developed.

To co-actively present the "seat drop", the teacher first jumps with the student so that the movements of their bodies are coordinated. The teacher then says, "seat drop", (another person may give the "sit" sign within the student's visual range). As the teacher does this he executes a "seat drop" along with the student. The teacher will need to force the student's legs out and keep the student's hands down. Great effort on the teacher's part may need to be given to support the student's trunk as this may fall backward into the teacher. (Much difficulty will be taken away if the teacher practices this co-active presentation with a skilled student, aide or volunteer. Also a spotting belt can be used, controlled by two aides on the side of the trampoline, to support the student's trunk so that she sits straight upon landing). The weight of the two bodies should provide enough rebound force so that the return to standing cannot be too difficult. Watch that the student's legs are brought back along with the teachers. This should occur by the force of gravity, but if not, the teacher should be prepared to return to the sitting position quickly.

The important points to look for in this method are first of all the movement of the student's legs. They must be forced straight out. The trunk must remain straight upon landing. And the legs must be returned to a point below the student's body for standing. Always keep a line of communication. Consistently repeat "seat drop", "jump", and whatever directional cues may be necessary. Perhaps with this skill more than others an athletic teacher is a necessity and this person will require much practice so that mistakes are few and the danger of the co-active presentation is lessened.

A model of the performance of the student may be given the student to follow. For this the student may be on the floor or on the trampoline with the teacher. When the student and teacher are on the trampoline together a large trampoline should be used with spotters on all sides. For this method the teacher performs the stunt several times as the student watches. The teacher repeats verbal and/or manual sign cues as with the other method as the stunt is being performed. The student is then asked to perform the stunt as the teacher has. Again the teacher repeats the cues consistently as the student makes an attempt at the stunt. At this point the teacher, on the trampoline with the student, may help by holding the student's hands as the student attempts to stunt. The teacher supports the position of the trunk and may help return the student to standing by pulling up. The teacher should not be jumping with the student at this time. As the student gains control the teacher releases support. The method then becomes simple. The teacher's performance is followed by the student's performance, one after the other.

The important point to look for is the return to standing from the sitting position. This requires a push up with the hands and a quick movement of the legs and upper trunk to position the body in the standing position. The teacher must be careful to set a good example by performing the stunt and emphasizing these points in the performance.

This will most likely be the student's first experience with the free-floating movement of the body. This is a completely unique experience when you consider the fact that the student is, by this time very used to moving on a hard, unyielding surface, against some resistance. Although these stunts are performed basically through the force which comes from the trampoline before lift-off, the movement is in the air where no resistance or support is present. For the cautious student this may at first be a frightening adventure. For the exploring, outgoing, student it will be an exhilarating experience. For all students some degree of fear and excitement will accompany initial attempts, and be present within all proceeding performances.

KNEE DROP

The knee drop is a stunt which is simple in nature. It may be difficult to perform due to the movements and balance required. The stunt, itself, is accomplished simply by bending the legs at the knee immediately after jumping, then landing on the knees and lower legs for one bounce, then returning to the standing position on the feet.

Activity - The co-active presentation of this stunt will prove to be too cumbersome and difficult. It will not be given here. The imitation of a model is the only method which is effectively possible. It will be necessary to first put the student in the position of landing, on the knees with trunk straight, prior to attempting the stunt. The student may be bounced in this position a few times to get the feel of the movement and support necessary. After watching the performance of the teacher the student attempts the stunt independently. The blind student may jump and perform the "knee drop" with the teacher jumping and performing at the student's side. By this means the teacher and the blind

student perform together much as they would co-actively. The student may only feel the movement and position of the teacher in a kinesthetic or proprioceptive sense. The teacher will need to exert a great deal of control over herself as well as the student to attempt this method. The same athletic teacher used with the co-active "seat drop" will be a necessity. Communication should be consistent and cues given so that the student has time to respond and move with the teacher.

The teacher may stand on the trampoline with the student, holding his hands, in order to provide support and insure proper positioning. Watch that the student does not jump out, forward, before coming to his knees. The stunt should be performed within the same area as the jump. If a cross or other mark in the center of the trampoline is available use this as a reference point for all stunts. Be sure that the student is able to land correctly in the flexed-leg position. The trunk must be kept straight so that undue pressure is not given the lower back. Do not allow the student to lean forward or backward upon landing. If necessary use a spotting belt to keep the student's trunk in correct position. Emphasize the fact that the hips do not flex, but remain fixed upon landing. The arms held at shoulder height are used to maintain position of the trunk.

CHEST DROP

This stunt should only be presented to the most skilled performers. When the student has developed some skill at the independent performance of the knee and "seat drops", the "chest drop" may be presented. The "chest drop" is the movement of the legs back and out, and the forward tilting of the trunk so that the body is placed in a prone layout position. The body contacts the bed of the trampoline initially on the chest. The action is then reversed so that the student returns to standing. The factor of fear will be most present with this stunt unless the student has good confidence and the ability to control his body well. A bi-product and main objective of this stunt is the development of these two factors of confidence and body control.

Activity - The student must first be made aware of the landing position and the placement or position of body parts in preparation for landing. To do this a simple drill may be employed which will give the student the experience of dropping to the chest for a low height. The student is positioned on the trampoline in a hand-knee stand. The teacher bounces the student on the trampoline by pushing down on the bed and allowing the student to bounce. The push should be timed to the downward motion of the student on the bed. On the command of the teacher the student is instructed to throw his arms and legs out from under his body, allowing his body to fall to the mat. The teacher, and an aide, may pull the student's arms and legs out from under his body if necessary. Do this only after describing to the student what you are going to do and when.

When the student has gained some confidence and ability in this drill begin to instruct the student on the placement of the hands. The hands should be placed on the trampoline, upon landing, just below the shoulders or in front of the face. The arms are raised and elbows flexed as if in the position where the student would lay to rest on his hands. Emphasize that the head should be held up and kept from striking the bed of the trampoline. This

skill should be first practiced from the hand-knee position.

To begin the practice of the "chest drop" from the standing position first have the student jump normally on the trampoline. On command have her fall forward throwing her legs back and land in the prescribed manner on the chest, with hands and arms protecting the face and head. Some students may want to fall to the hand-knee position, bounce once, then to the chest drop. This is permissable, but encourage the student to attempt the complete stunt. Failures initially are normal and acceptable. The student will need much positive motivation at this phase in order to move ahead successfully with this stunt.

To return from the drop to standing the student pushes off with the hands, by extending the elbows, and keeping the trunk erect, swings the legs forward to standing. It may be helpful to bend the knees and hips to allow the legs to pass under the body. They are then extended to stand and continue jumping.

Watch for the motion of the legs, back and the tilt of the trunk to bring the body into a prone position. The head is held up and the hands and arms are placed on the bed to protect the head. The hands and arms then push away forcing the body up and back to standing. Always emphasize the movement of the legs because they are used as prime movers of the body in this skill.

This skill, though it may appear dangerous, is neither dangerous nor difficult when presented in the proper manner. If the teacher takes the time to explain what is to be done and keeps the student calm and relaxed, yet motivated to do well, the student will reap the full benefit of his successful performance of this skill. This skill, and all the others, are within the range of most of the students covered within this program. Do not let a sensory, mental or physical handicap be the sole reason for keeping a student from at least attempting this stunt, or any others, when the developmental pre-requisites have already been met. The efforts of the teacher and aides are not close to equalling the effort the student must put out to learn these skills. The rewards for both student and teacher are great when a successful and consistent performance results.

LOG ROLL

Beginning in a hand-knee stand the student drops to one side and rolls. Or beginning in a back lying position the student rolls to one side on his shoulder, return to the back. These are the two methods of executing the log roll, which is the most elemental of the three rolls to be presented. The log roll is one of the earliest of the developmental locomotor skills developed. This is most common with a normal child but should be developed in the retarded or sub-normal child no matter what age the child may be ready. The use of the head, arms, hips, and legs together in a coordinated, whole body movement skill is most important to latter development of strength, coordination and movement possibilities. The sensory impaired student will receive a good deal of body awareness sensory stimulation and gross body movement capabilities from this skill and the other two to be presented.

Activity - For the student who is unable to assume the hand-knee, creeping, position use the prone, stomach, lying position as a beginning point. Always practice the roll in both directions equally. A student at the developmental level where this skill needs to be taught has not developed, or will not for some time develop a perference or strength of one side or the other. This student must be made distinctly aware that he has two sides and that he may move in either direction, left or right.

The student lies on her back with hands above the head or arms and hands held on the chest. Movement begins with the slight flexion of the right leg, when turning to the left; left leg when turning to the right. This leg is then brought across the opposite leg. At the same time the arm on the same side is moved across the body as the head turns to the side of the body's motion. The combined movement of the arm and leg cause the hips to rotate, keeping up with the whole body motion. Do not get the idea that the hips go along for the ride. They are a contributing member in the movement, acting both in a supportive and associative role.

These combined movements get the student onto her side. The continuance of these actions along with the pull of gravity bring the student through a full 180° turn. He is now on his stomach. Returning to the back is accomplished by a continuing motion of the body carried by the movements of the opposite limbs. The left leg and arm, when the right leg and arm start the movement, are flexed and carried back so as to "pull" the body around, rotate, to the back lying position. The hips again act to help rotate and stabilize the body. The log roll may actually start with the student lying on the back or on the stomach. Simply reverse the directions given above.

Activity - When starting in the creeping position the same movements occur except that the student must first get to a side-lying position from the standing position. Doing this the student momentarily shifts weight to the opposite side while raising the arm and bringing it up under the body. When the weight is shifted back the student allows her body to slowly fall to the mat. At this point movements continue as with the back lying start.

All students should be asked to perform the roll completely, executing a total 360° rotation. Some may need to be given aid with positioning or body movement at some points. The more severely retarded student may need to be manipulated throughout the entire movement skill performance. All students shall receive a consistent line of communication relating to the movement of the body parts and direction of motion.

As one rotation becomes possible with some ease encourage students to attempt two, three or four rotations. Use a long mat or series of mats together on which the student can roll. Emphasize keeping legs, hips, and arms in position so that the body rolls straight, keeping on the mat. The blind or deaf-blind student will need to be given cues relating to position on the mat and line of travel. All students should be expected to be able to log roll in a fairly straight line for at least 16 feet.

FORWARD ROLL

This movement skill requires that spotting techniques be used to protect the student, particularly in the head and neck area. The student should also be taught to use his hands and arms to lift and hold the head above the mat to avoid injury. Although the main purpose of this skill is to present a movement experience which cannot be presented in any other way, the use of the hands must be emphasized because of the danger inherent in this movement skill when performed independently without support. A movement experience which relates closely to this skill may be found in the General Movement Section.

Activity - The beginning student will start on her knees; the more advanced in a semi-crouched position, knees, flexed so that the thigh is horizontal, with hands on the floor outside the legs. For explanation purposes this skill will be broken down into five steps, the start, the tuck, the hip raise, the roll, and the landing. The start has already been given. Step two is the most important because with its completion the protection of the head and neck is nearly assured. The student tucks her head to her chest by bending the head forward so that the chin touches the chest just below the neck. The head should remain in this position throughout the performance of the skill. This fact should be emphasized at all times! The hip raise is accomplished when first the student assumes the hand-knee position, when starting on the knees; or a position where only the hands and feet touch the mat. The back of the head, close to the top, touches the mat but supporting no weight. From this position the student's hips are raised up and over so that the feet leave the mat. This movement of weight forward causes the body to roll over the back of the head, neck and back. During the rolling phase the back is rounded and the legs and hips are flexed so that the student assumes a closed "ball-like" position. Emphasize the fact that the hands and arms take the weight of the body and lift slightly so that the head may clear as the body is rolled over it. Spotting should be done here at the student's neck. The teacher places his hand on the back of the student's neck to keep the head in the tucked position and lift if the head is not clearing! A push on the buttocks may be necessary to help the student roll. A student starting in the knee standing position will most certainly require a push at this point. To land, the student simply comes to a sitting position by extending her legs and placing her hands at her sides on the mat.

Most students will require this skill to be taught step-by-step and not as a whole movement skill. The first part is presented, then the second is practiced and added to the first, then the third, and so on until the entire skill may be performed. The backward roll should also be taught by this method.

BACKWARD ROLL

Essentially the backward roll is performed as the forward roll. The difficult part is the placement of the hands for lift and support. There

may also be some degree of fear of moving backward. This may be most evident in sighted or partially sighted students, although this may be a new and unusual direction of movement for the totally blind student. As with the forward roll there are five steps. The start and landing may vary slightly from the forward roll.

Activity - The student may start in a semi-crouched position or a sitting position with legs flexed and drawn up to the chest. The student's back is facing the direction of the roll. Again the tuck is important. Tuck the chin to the chest and keep it there! At this time also, the hands are moved to a point above the shoulders, palms up and fingers pointing back in the direction of the roll. Maintaining this position the student begins the hip-raise step by falling backward onto his back. The legs are then forced, "kicked", back in the direction of the roll, raising the hips up and over the head. At this point the roll is almost completed. The hands contact the mat and simultaneously push so that the body is raised from the mat. The back is rounded and the legs are flexed. The student lands by stopping himself with his hands when they are placed on the mat behind his body at the completion of the roll. By extending his legs just after pushing up with the hands his feet contact the floor and the student may end in a standing position if desired.

Safety is the one important aspect of the presentation of these two rolling stunts. Any student, even the most talented, will require spotting to protect the neck. Never allow a student to perform these stunts without these precautions.

TRAPEZE SKILLS (Horizontal bar, Parallel Bars).

The stationary trapeze is a special medium in which movement stunts can be performed. The muscles used and the manner in which they are used can be duplicated in no other way. The support of the body and the small surface in which the body must be supported are possibly the most significant aspects of these skills. The student must exert a special type of pinpoint muscle action in order to move and support the body. There is only a relatively small surface of the bar on which the student moves. The student must be able to support his body mass on this small area.

Trapeze skills are included here as manipulatory skills and not as stability because these movements are a manipulation of the body. The stabilization efforts are secondary to this movement function. The two climbing skills probably can be considered more locomotion than manipulation. But when the skill is considered as a movement over a surface with a high degree of body control involved the skills become more manipulation. These movements are for performance purposes only and serve little in the locomotor sense to move purposefully from one point to another. The two climbing skills are then manipulation skills requiring locomotion and not locomotion skills which require manipulation. The hanging stunts are stability skills. They are presented there because they are useful for introduction and acclimation to the trapeze or horizontal bar. For organizational purposes they should be considered stabilization skills. But for developmental needs they are part of the introductory skills to be learned on the trapeze.

There are, of course, many more movement skills which may be performed on the trapeze. These go beyond the intent of this program. They are merely introductory and experimental movement stunts. We are interested in broadening the student's movement experiences. It is highly suggested for the interested and capable student that a more complete progression and expansion of skills be introduced and practiced.

The sensory impaired student will find the experience of movement on or over a trapeze quite exciting after initial responses of fear or apprehension have been alleviated. Of course, the accomplishment of skills on a special medium as the trapeze is and can be rewarding to the student's self-image and self-confidence, two areas of importance to the handicapped person. Also, the body awareness and image which can be developed and enhanced through the stimulation of movement over the bar must be considered as useable objectives for the student to accomplish.

BAR HANG - Hands

A mat should be placed under the bar and spotters will be necessary to help the student. The bar should be positioned just a little (3-4 inches) above the student's reach. The student may be lifted to the bar or a chair or stool may be used. The student would hold the bar and step off the chair to assume the hang.

Strength is the most prominant factor of this skill. The arm, hand and shoulder muscles are called into play mostly. A straight arm hand will be introduced first. As strength and ability increase the hand position can be reversed and a bent arm hang or chin-ups can be attempted.

Activity - The student begins, on the chair or on the floor, standing with hands above the head. The hands grasp the bar in a forward grip, palms away from the student. The fingers and thumb are wrapped around the bar, if the student's hands are big enough. If this is not possible the student should attempt to get the fingers and hand to surround as much of the bar as possible. When a good hold is obtained allow the student to step down or take the weight of the body so that it hangs from the bar. Due to initial weakness the student will require a little support to help hold his body up. As practice increases so will the student's ability to hold himself independently; and the time of holding will also increase.

In the beginning the important thing to look for is that the student keeps her hands on the bar and the body is held straight. There may be a tendency for the student to flex her arms or hip. This should not be allowed. The student should be encouraged to control her body well enough to keep the body segments in proper position.

BAR HANG - Legs

This may possibly be the first experience for the student in an inverted position. Because of this, care should be taken to alleviate fear and anxiety. Also spotting techniques become important and a mat below the bar is a necessity. Actually little strength is required for this stunt. However, getting into position for the hang may be difficult.

Activity - The student may start in hanging position or may be put in a position on the bar with the knees over the bar and the hands holding the bar outside the legs. In which case the student is already nearly in the hanging position. If the student is to be placed in this hanging position, two or more people must help. When the student starts in the hand-hanging position some help may also be needed. The more stronger and adept students will be able to start this way. The first move from hanging is to raise the body up by pulling with the arms. The legs are then brought up further and back so that they go through the arms touching the bar with the back of the knees. The knees are then flexed so that they hang over the bar. The student maintains this position by holding with the hands and keeping the knees flexed.

Allow the student to practice hanging in this position so that she may be able to become used to it. From this point the student releases her hands from the bar and allows her trunk to fall so that she is hanging vertically with the head down. Keep the knees flexed tightly. The student should hang without swinging. To return to the starting position the student reaches up to grasp the bar, outside the legs. Some pull on the abdominal muscles, executing a sit-up, may be necessary to bring the student up to the bar for the hands to grasp.

The teacher and an aide must always be at the student's side to give support and directions. Watch the student's legs to be sure that they are holding the bar. If the student is having difficulty return him to the starting position or support his weight so that he may make corrections. Under no circumstances should the student be allowed to hang upside down for more than ten seconds. If the student has some cardiac difficulties he should try no longer than five seconds. A period of thirty seconds to one-minute should be allowed for the student's circulation to recover upon righting himself.

SWING

When the student has become accustomed to the bar and is hanging independently, encourage her to begin to swing herself while suspended from the bar. This is accomplished by the use of the legs.

Activity - The student begins in the hand-hanging position. The hands grip the bar lightly. To swing the student raises her legs by flexing at her hips, thus raising the legs while keeping the knees straight. The hands are released slightly so that they may move around the bar as the body swings. As the momentum of the body starts back the student allows his body to swing until movement is about to cease. At this point the student should flex the arms, pulling the body up slightly; then extend, straighten, the arms as the body reaches a completely vertical position, right angle to the floor, the legs are kicked forward, flexed slightly at the hip. This momentum will carry the body forward. When movement in this direction ceases the body is allowed to swing back. Just after the vertical position has been passed the arms and shoulders again flex bringing the body up and back; the cycle continues as long as it may be attempted.

Activity - For the beginning student the momentum, or force of movement, will need to come from a teacher or aide standing at the student's side. The student simply grasps the bar and allows his hands to move around the bar as the body swings. The student must also keep his body as straight as possible and keep the knees straight. The hips only should be allowed to move. The teacher pushes on the student's thighs, upper leg. Each time allow the student to return before pushing forward again. Push very easily at first, so that there is very slight movement. The swing can be increased as the student shows the ability to hold onto the bar. This ability to grasp the bar and allow the body to swing will be long in coming because it calls for a fine coordinated effort of the hands and arms. Many trials will be needed and much encouragement must be given the student. As a teacher you should attempt to decrease failures, but they should also be expected. Always encourage the student to move her legs as they are being pushed. The student should be stimulated to sense the movement of the legs as they swing. They will swing freely the way they should be manipulated by the student. That is, if the student attempts to reproduce the swinging motion of the legs by her own power this would be the skill needed to perform a swing on the bar.

The line of communication to the student from the teacher is most important. The student should be kept aware of body position and the direction of movement, forward or back. Because of the importance of the leg movement keep the student informed of their position in particular and the motion they are making. Remind the student, when necessary, to allow the legs to swing freely, except when they are to be controlled.

CLIMB OVER

To be described here are two stunts which can be done on a set of parallel bars and worked out as a part of a routine if desired. Their purpose is to provide an experience in locomotor-manipulation of the body over and on a small and restrictive surface. The bars have an extremely small surface on which to work. This lack of area calls for a challenge which cannot be found in any other area. More than likely the student who has a low ability level, for what ever reason, will be unable to attempt these skills. However, the experience of moving over or being moved over the bars is an important experience for all students, no matter what the ability level.

Activity - In actuality the two skills are performed the same. This description will then include both actions. The only difference is that when climbing two bars the student will cross over two bars rather than one. For the student this will be a different experience, but performed alike in either case. An adjustable set of sturdy parallel bars are used for this activity. Either the type used for walking or gymnastic bars may be used. Mats should be placed under and around the bars and the teacher and one or two aides should be spotting the student.

The student begins by standing and facing the bar, or bars. The bars are adjusted to be somewhere between the students chest height or the height of the student's reach. The ability of the student should determine the placement of the bars within this range. The bars are grasped and the student pulls her body up. At the same time one leg, likely the preferred leg, is raised to get

the foot over the bar. When the foot is on top of the bar, the student continues to pull with the arms and the leg. When crossing two bars the student will pull up with the arm and leg they cross the lead leg over to the second bar.

When the student has pulled his body to the bar he lays out on the bar, the chest and arms taking the weight of the body. The lead leg continues over the bar as the arms and the trailing leg hold the body on the bar. The trailing leg is lowered to the floor and the arms slowly extend to lower the body to the floor. The lead leg touches first, followed by the trail leg.

The student should not hold her body on the bar, but slides over it. The hands provide a good deal of support and the position of the head is important. Watch these two points, the head leads the direction of the body unless it is controlled. The legs movement should initiate the movement of the rest of the body, not the head. The hands will need to be shifted at the top of the bar, so that better support can be given and their position can be put in place for coming down the other side. The hand on the same side as the lead leg will have to cross over the other hand and hold in that position until the other hand can be switched. The fingers should point away from the body in the forward grip coming up and going down.

Realize that this will be difficult for the student but will come naturally with practice. Do not be too eager to allow the student to perform these skills independently too soon. A great deal of control is necessary, and this requires much practice. The teacher should always be ready to help or spot the student, even when independence has been gained.

STABILIZATION ACTIVITIES

What may be referred to as maintaining a base of support is usually called stabilization. This customarily includes such things as balancing on one foot and walking a beam. As will be described, stabilization activities include much more than these relatively simple stunts requiring balance.

Balance is an important, and integral, factor involved in stability. But balance is not the one prime factor of stabilization. The individual's ability to remain in a stable position depends upon the sense of balance as well as the "senses" of kinesis and proprioception, feeling of movement, and body position, and a sense of bodily control which includes coordination and agility.

The working mechanism of stability is found in the ability of the individual to keep balanced. This can be said to be a sense in that the bodies balance is felt and sensed, and that a part of the ears are the sense organs for balance. The inner ear, located approximately in the center core of the skull and filled with a liquid, senses the movements of the head as it relates to the body and helps gives the individual information as to the body's position in space. The proprioceptive sense, already referred to in an earlier section, is located in the neuromuscular system of the body, and gives information relating to the position of body parts, in particular, the arms and legs. The kinesthetic "sense" is closely associated to proprioception. Kinesis provides information in regards to bodily movement. It can also be said to be located in the neuro-muscular system.

It should be pointed out that the "senses" of kinesis and proprioception are on the experience level of perception. These movements and positions are sensed by the individual but cannot be used appropriately for stabilization until the individual can perceive the movement or position and respond to these sensed cues.

To remain stable the individual must first receive a cue from the inner ear that the head is moving and in what direction. The position and movement of the arms and legs must be perceived, as they may be the cause of the imbalance and certainly the means for the re-stabilization. When these things are sensed, the body must react to put itself in a position where it may stand. This reaction is where the individual's coordination and agility come into play. If the individual is incapable of righting himself, the work of senses involved prior to this is all for naught. It is in this area of agility and coordination where these activities and the work of the teacher become important. Coordination, and agility to a point, are teachable. The teacher must, through the use of these activities teach the student to react to the senses in order to keep a stable base of support, under all conditions.

It has been mentioned earlier that an auditory handicap may be closely related to a handicap in balance. This is caused by the damage to the ear and its effect on the inner ear. When this occurs it must be overridden and the remaining senses of proprioception and kinesis must be developed to cope with and overcome this loss.

Quickly here the importance of the sense of sight to balance will be mentioned. This will be elaborated in relation to the activities latter. The individual must balance in relation to the sense and perception of movement within her body and also to movement or position outside the body. The eyes are the means for sensing these factors outside the body. The body can be maintained in a position when its motion or positioning can be related to an external object or point in space. This object or point is usually stationary but may be moving. The visual sense then acts much like the inner ear and in conjunction with it, when both are operable.

The sensory impaired student is more than likely differenct in one or both of these senses. This presents a unique problem to the performance of stability activities. The problem must be dealt with on an individual basis. Any degree of useful visual or auditory sense must be considered and used to its fullest extent.

The following activities will be concerned with practicing and developing the basic abilities and skills involved with maintaining a stable bodily position, both as a performance of balance and as a part of a performance of movement and movement skills.

For ease of explanation, balance and stability will be defined. Balance is primarily the sensory act of keeping the body in a state of positioning equilibrium. Stability is a physical-motor act incorporating balance which maintains a balanced state of the body and its parts in both stationary and moving activities.

(1) STANDING

This is possibly the most basic of the stability activities. There are three forms of standing which will be considered here. It should be recognized that there are many more standing postures and positions than these three. Other standing variations would be based upon the three positions two-foot stand, one foot stand, and heel-toe stand. This is why they are included here. A student capable of performing the three basics is capable of attempting and succeeding at most variations.

Standing is the act of positioning the body on one or both legs and maintaining an upright, erect position. The theories and attitudes pertaining to posture and its correctness or acceptability may be discussed here, but will not be due to its inappropriateness. It will be sufficient to say that the human body can be considered as a whole made up of parts or sections, one atop another. The legs form the base on which the body stands. The base may be as wide or narrow as the structure of the base section allows. The hips sit on top of the legs; the trunk on top of the hips; the arms and shoulders rest on the trunk; and the neck and head rest upon the shoulders. Each of these five sections may move, twist, turn, spread, be raised or lowered, together or independently. Each has its own weight mass and this mass has an effect upon the other sections and the entire body. A movement of the head and arms will effect the position the legs, hips and trunk must take in order to maintain a stable standing position. The head is particularily important due to the sense organ of the middle ear which is located

within it. In essence the head directs most of the movements. It is most difficult to move in a direction opposite that of the head.

TWO FOOT STAND

This form of standing is most natural and common. It has been referred to in the locomotion activities section. Standing is one of the developmental steps which must be achieved before walking may occur. In fact the performance of most of the activities presented in this program are done in a standing position.

As the student stands he should be encouraged to hold an erect position for as long as possible. Practice will gradually increase this time. A group of related muscles in the legs, abdomen, and back are referred to as the posturing muscles. These muscles act on the reflex level to almost unconsciously keep the body erect. They are almost always in a state of contraction when the student is standing. In the beginning their use must be conscious and the student must be made aware of their use. Tactial stimulation is most necessary in the early phases of standing work. These muscles are found along the entire back bone, the stomach region, the front and back of the upper and lower legs and the feet, in particular the toes.

Activity - Stand the student with the help of one teacher and a bar or other stationary object, or with two teachers or aides. When the student is standing remember the idea of body sections. Watch to see that each section sits balanced one upon the other. Initial weakness in the posturing muscles will cause these sections to not sit properly. If this occurs attempt to position the student as best as possible and stimulate the use of the muscles. Motivation is usually the key to the use of the muscles. It is the teacher's proper positioning of the student's body which determines how well the muscles are used and how well the student will eventually stand.

Gradually increase the amount of time the student is asked to stand and decrease the support given. Incorporate the standing practice with walking practice as described in the walking activities.

ONE FOOT STAND

This has been alluded to in the locomotion section in reference to hopping. All of the standing activities are much the same. It is a process of standing for longer periods of time with more independence. The student begins by standing with a lot of help and eventually reaches the point where independent standing is accomplished.

Standing on one leg is important to developing sidedness, an awareness of the sides of the body and preference for one side over the other. Although the student may prefer standing on one foot, the right or left, she should be encouraged to practice using each foot. This will result in a more complete knowledge and awareness of both sides of the body, and consequently a better body usage and self-image.

Activity - The student with the help of one or two teachers or aides, stands on one leg only. The leg not being used is held suspended, off the floor. The student may hold it up by bending at the knee or simply raising it from the floor. All of the student's body weight is transferred to the one leg on which she is standing. The hips, trunk, arms, shoulders and head must compensate their positions so that the entire body is balanced and held stable. The arms are important to help keep the body in balance. When the body weight shifts to one side the arm on the opposite side may be moved so as to compensate for this slight imbalance.

When the student gains some independence the teacher may simply hold the student's hands or forearms and help the student keep balanced. For the blind student the tactial and kinesthetic senses must be kept active and stimulated. It is these senses which are most often used to react and adjust the stability of the body. The importance to the blind or partially sighted student of a good sense of stationary stability and balance must be recognized. If a student is able to maintain an erect posture, no matter what the base, with no more than normal difficulties, he has set a good base for stabilization when moving. Understand that the blind student must be able to feel balance and a stability from within. There cannot be any visual cues with which to relate. Some auditory cues may be possible but not always sufficient. (Just try to stand blind folded for a period of time without moving). The teacher must position the students body so that it is balanced. This will most likely be the most comfortable for the student. But do not rely too much on the student's tactial comfort. Oftentimes incorrect and damaging postures may be comfortable. A correct standing posture is never damaging nor is it truly uncomfortable.

HEEL-TOE STAND

When the student has developed some competence in one-leg standing have her attempt a heel-toe stand. This is accomplished by placing one foot behind the other and touching the toe of the rear foot to the heel of the forward foot. The feet may be alternated. They do not need to touch in the initial phases. A good thing to use is a line, approximately 2-3 inches wide, placed on the floor. The student is asked to stand with both feet on the line, one ahead of the other.

Activity - Have the student stand as described above, with some support. Again, gradually release support as the student is able to take his own. Encourage the use of the arms as compensators for imbalance. Be sure that the feet remain on the line, one behind the other. Because of flexibility problems this position may be difficult to assume and hold. With practice it will become much easier. It may be necessary to just practice keeping the feet in position before actually standing in this position.

(2) BENDING

This activity and those to follow, numbers two to six, are performed or begin from a two foot standing position. The associated movement which is

part of the activity takes part in one or more of the body's sections. This necessarily involves compensation for stability from the other sections. For the most part these movements put the body out of balance and the compensation is necessary to maintain stability.

The activities which are to be done along with (numbers 2-6) - the following abilities will be the same. It is simply practice with some support and assistance in the movement. The support and assistance is of course gradually removed. These activities should be used primarily for the purpose of their stimulatory experience. The movements are relatively simple and the movement stimulation received is important and enjoyable to the student. As with most basic movements and postures a good deal of general independence may be gained by their performance. These movements are easily incorporated into routines and form the essentials of the more complicated skill movements associated with games and sports. For these reasons do not under emphasize their use and practice. They are an important and necessary part of any good motor developmert and/or physical education program.

The descriptions for these activities will be taken from the book Moving and Learning, by David Gullahue, Peter Werner, and George Luedke, Kendall/Hunt Publishing Co., Dubuque, Iowa (1972).

"Bending involves bringing.....(p.55).

(3)	Stretching	p.58
(4)	Twisting	p.60
(5)	Turning	p.62
(6)	Swinging	p.63

(7) STOPPING

This skill is involved in all locomotion activities. It is essentially an absorption of the forward momentum, stopping the body's movement. The stop is accomplished by just spreading the base, applying friction on the floor, and a backward lean of the body. This keeps the body in balance and helps to neutralize the forward momentum. When the student is walking or running in a straight line he stops by placing one foot forward, spreading the base, the friction between the foot and the floor slows the body down. The student leans slightly back, neutralizing the forward momentum. The knees may also bend to help absorb force.

The movements of this skill are quite simple. It is the positioning which is the most important action to be accomplished. The body's balance must be maintained and held stable, so that the student does not fall. When the body is held up, it is easier for the rest of the body to hold a stable position. This applies for the blind student as well as the partially sighted. The deaf student may have no problem positioning the head. But if the inner ear is affected this student will need to rely on sight to a great extent to hold positioning.

Activity - Begin as simply as is necessary. Walk with the student, holding her hand or elbow. At this point most students should be able to feel the position and when asked to stop should not have much difficulty. Explain to the student that as you are walking you will periodically ask him to stop (you must stop with him). When the student stops, watch for the points presented above, especially the body positioning.

If the student stops and falls over his feet or otherwise incorrectly performs, explain what is to be done. Point out, demonstrate, and practice the step to widen the base, the lean back, the knee bend, and the head position. Your demonstration may be a little over exaggerated so as to more clearly point out the backward lean. This lean may be the most difficult to get across.

When the student has gained the idea of the action which is called for, practice by walking around a room, in a hall, or on a sidewalk. Stop periodically. Be sure to call out the direction to "stop". When the student is able to relate the word to the action progress will become more easy. Gradually release your contact with the student and rely on the verbal command. The student may start by taking two or three steps to stop. This will lessen and should be expected at first.

Begin to walk faster and start a run. When practicing proceed as slow or fast as the student is able to accept. The idea is to get the student to come to an abrupt halt from a run. This is difficult and requires much practice from the beginning. In the long run it is very beneficial to the overall agility of the student. The ability to stop without difficulty is also an integral part of eventual mobility training, if this is to be done.

DODGING

Continuing on from the skill of stopping is the skill of dodging, stopping and changing direction. Dodging may be done in relation to an object or barrier in the individual's path. The student needs to stop and change direction in order to dodge or walk around the obstacle. When the student has mastered the stopping skill, dodging comes easy. The student may be asked to dodge stationary or non-stationary objects, while walking or running. Walking and dodging stationary objects is the simplest form to begin with.

Activity - As with the stopping activity, begin by guiding the student around a room or in a hall. Place objects (chairs, tables, large toys, pilons, etc.) in the area at various intervals. Directions apply for both sighted or sight impaired students. The student is to walk with the teacher. Upon meeting an obstacle she is to stop and change direction. The direction does not need to be designated. Give the student the opportunity to make this choice. The teacher should attempt to influence a varying number of choices.

The movement for change of direction should be slow and controlled at first. The student moves his feet, turns his body and proceeds in the desired direction very deliberately. As the student gains control and experience increase her walking speed and the speed of dodging. The student should gradually progress from bumping the obstacles to not even touching them. Introduce slowly moving obstacles. The student can move slowly in a room where the obstacles are moving or being moved. The student must guess the relative speed and distance in order to avoid the object as it approaches.

A good game to play is to have a class of six to eight students in an area of 15-20 feet square. All objects, desks, tables, mats, etc., are removed so that the area is open. The students are directed to walk about the de-

fined area without contacting another student. With blind or visually impaired students this may be changed slightly to suit the needs and abilities of the students.

It is easy to see that this skill activity is obviously more important and necessary for the deaf-blind, blind and visually impaired students than for others. In any case the skill is important and necessary for overall control and agility. For those visually limited these movement skills are requirements in the path to normalization. This activity and the others in the stability section would be appropriate to include in a mobility training program and may be used for that purpose.

GENERAL MOVEMENT

What is General Movement?

Without calling this section a "catch all" for those undefinable movements, I will say that this section is devoted to descriptions and activities of movements which promote a general base of movement skill. It may be more precise to state that these skills are not skills but the patterns of movement which form the base for the abilities and skills to follow developmentally. Actually some of these patterns do not have a definite place in the prescribed "normal" path of physical-motor development. The achievement of one of these patterns is not a plateau or benchmark for developmental advancement.

These patterns, general movements, are the prime members of those factors which make up the most basic of all development. Development of a child can be described as if it were a tree. A tree with roots, strong trunk, branches and twigs of various sizes in lengths and thicknesses. The roots are the base and underlying strength of the tree. Structurally, the roots are the tree's support. A tree, no matter how big the trunk, would certainly fall if not for strong roots. The trunk is the above-ground evidence of the tree's size and strength. The branches and twigs reveal the tree's diversity and spreading of developmental pathways.

When a child is born his developmental roots begin to form. The tap root or main feeder line of available developmental material is the five senses of the body. A good deal of information is taken in during the first two or three years of life. A large percentage of this initial sensory input is derived from the child's movement. The child's sensations of the movement of her body are a primary developmental branch-root from the tap root. It is in a structural sense for the developmental tree, a prime factor of support. The child's first and possibly the strongest force encountered in the pre-natal life is the sensation of movement of the mother, in which the neo-natal is living.

Life in the womb probably holds little tactile sensations due to the water surrounding the pre-natal child. As the mother moves about walking, bending, stooping, sitting, standing, etc., the child receives the input of this motion of the body in which he finds himself. It is not my purpose here to go into a discussion of the pre-natal period of life. But let it be stated that these sensations are stored, on a computer type in the child's brain as it were, kept there for future reference. The sensory reference tapes indicate even the movements during labor and the child's bursting forth into the world outside. The first days and months of post-natal life are full of sensory movement experiences which must be taken in and stored. Few of these movement experiences are self-initiated for the very young child is highly dependent on those around her for sensory input of all types.

It is these sensory movement experiences which parents, adults, and others who care for the child provide. We know that the kinesthetic senses are not the only senses stimulated. But for our purposes we will consider these alone. The branch root which entails motor development is then the earliest to develop, and possibly the most important, as it may have strong connections with other areas, branches, of development. This is of course, hypothetical and highly speculatory at this time.

Taking these things into account I will go on to state that the structure of the developmental tree produces a trunk which is the combination of all of the developmental roots. Each of these roots are interconnected and inter-related. The trunk is the storage place for all the abilities and skills which form the developmental process of the child. The branches are the diverse skills which come from the combination and use of the various developmental factors within the trunk. Remember that the ultimate strength of the tree is dependent upon its base in the strength and full development of the root system.

What this analogy is attemptting to point out is that the child requires and oftentimes does not receive a strong base of sensory development, the input reference tapes. This is especially true of children who are handicapped because of neurological, brain or central nervous system damage. This damage causes mental retardation, physical handicaps and sensory impairments. In particular this refers to students in the severe and profound range of mental retardation, those with mild to severe brain dysfunction and cerebral palsy, and those who have limited sensory function or total loss of vision, speech and/or hearing. The base, root development, so necessary for development is absent because it has not been provided. These students are not able to take in this important information on their own, but require special means of stimulation to begin and develop comprehensive reference tapes. It is for this purpose that this section is being presented and the reason why it should be a strong part of the developmental programming for the mentally handicapped and sensory impaired student.

GENERAL MOVEMENT IN PRACTICE

A small child is carried about by another person. The child does not move from place to place on its own. Movement stimulation received is from the sensation of movement through space, the rocking and swinging in a swing

or mother's arms, bouncing on father's knee, the turning and twisting that goes on in the everyday life of the child as it is moved about dressed, changed, bathed, fed, etc.

The sensation of movement which the child receives is stimulating and satisfying. For the most part these sensations are enjoyable and relaxing; a child will go to sleep much easier when held southed and rocked by a parent. The usefulness of the sensation to the child's motor development is based upon the resource typed which are stored concerning these initial early movement experiences. A child who finds movement enjoyable, comforting, stimulating, secure, relaxing, will have little difficulty accepting and initiating his own movements. The security and motivation here is most important for the child and the student.

For the student not able to fully take in the movement simuli afforded additional work and cues need to be provided. This student requires a more concentrated program of general movement experiences. The general movement activities are then integral parts of the normal motor development process. Their importance lies in the formation of a strong base, deep roots with which to hold the developmental tree, a base of movement patterns which lead to and are part of the abilities and skills to follow.

The movement sensations received are held in memory, resource tapes. The tapes act as the vital link to the perceptions and concepts which must be developed in order to learn movements and develop independence.

As part of this program the general movements activities will be used as early motor development stimulations. For the student who shows signs of difficulty with factors such as body image, spatial awareness and/or a general inability to sense or accept movement possibilities of the body these activities will be indicated. Their use will be a specified part of a total program for this student in Physical Education and Motor Development. Because the general nature of these activities it will be difficult to pinpoint exact uses for each activity. The benefits arise from the student's abilities and needs as related to movement experiences. For the deaf-blind and blind student the gross movements of swinging, bouncing and rolling are most beneficial and enjoyable. A strong base of body image, spatial awareness and movement possibilities provided through these activities is especially necessary to the student's development of physical-motor and mobility skills. Their use also during the plateau periods between each skill accomplishment is invaluable. The general movements here will be closely related to the previous and upcoming skill.

GENERAL MOVEMENT ACTIVITIES

These activities may take place in anyone of three stituations; on a trampoline, a mat or carpeted floor, or as the student is held in the teacher's or parent's arms. Many of the same activities may be performed in all three situations. Some are specific to the situation. The activities will be

thus organized as to trampoline activities, mat activities, and teacher supported activities. Where an activity may be used in one or the other of the situations it will be mentioned in the description and discussion of that movement activity. All of the activities are performed passively by the student. The teacher along with the help of aides provide the movement force and direction. For the student these activities are play and she should simply take in the stimulation offered through the movements. The teacher is to see that the student receives this stimulation through the tactile, kinesthetic, visual and auditory senses as much as is possible. In actuality these activities are as much or more exercise for the teacher as for the student. The teacher will therefore need to be in good physical condition. If the teacher suffers from inhibiting handicaps or conditions of the heart which may cause difficulties it would be contraindicated to use these activities or another person may be designated for this responsibility.

TRAMPOLINE ACTIVITIES

Before descriptions of these activities are started it will be best to strongly remind the teacher of the extreme necessity of taking care to protect and safely watch the movement and support of the student's head and neck. Many of the students for which these activities are indicated are not able to support and control the head and neck. Because of the vigorous, physical activity involved with these techniques caution must be taken so as not to cause injury or to take undue chances with the application of these methods.

However, this should not be taken to imply that these methods are overly dangerous. They are no more dangerous than ny other method of stimulation or therapy when the proper procedures and precautions are taken.

The trampoline is an especially unique piece of equipment which provides purposeful and beneficial movement experiences. It may be effectively used to provide passive, passive-assistive or self-assisted movements of a stimulating and enjoyable nature. The possibilities for movement experiences are great, and certainly pass beyond those given here. The limits lie in the teacher's capabilities and the student's needs.

A trampoline of secure, sturdy construction with steel springs and a closed canvas bed is suggested. The size ranges from 4 x 8 bed on up.

(1) LYING BOUNCE

Position - The student lies prone (on stomach) or supine (on back). The activity may be done either way. The teacher stands on the tramp straddling the student's body at the waist preferably.

Objectives - The student should receive some initial movement stimulation. The act of bouncing is supported movement in space. There are sensation of movement in almost all of the joints of the body. Though

basic, these movements provide a base to movement and initial inroads to self-image, spatial awareness, directionality and body awareness.

Action - The teacher begins by lightly bouncing on the bed. The teacher's feet should not leave the bed. Watch for the student's reaction to gage acceptance of this movement. The force of the bounce may be increased as the student tolerates and the teacher is able to perform. To provide extra stimulation and experience the teacher may shift his weight while jumping. The teacher bounces one time by applying force on the left foot; then bouncing on the right foot. The sides are alternated. The bounce should give the student some sense of movement to the side and possibly elicit some reflex responses. The bounces may be increased as the student tolerates. Do not bounce so hard so as to flip or turn the student over.

Watch for excess movement of the joints of the body. The arms, legs and head should not be jolted or harshly bounced or "flopped" on the tramp bed. The variations of positioning the student on his side or in a tuck position while bouncing may also be done.

(2) BACK BOUNCING (leg manipulation)

Position - The student lies on her back. The teacher is positioned at the student's feet, standing or kneeling. The teacher grasps the student's ankles firmly.

Objectives - A sense of the movements of the legs and hips required for walking and sensation of those muscles and joints required for support and walking, turning and rolling is elicited from this activity.

Activity - The teacher bounces lightly holding the student's legs. Push slightly on the downward bounce and pull slightly on the upward thrust. The knees are kept locked so that the force is effectively felt throughout the leg and especially at the weight bearing points on the hip. Beginning easily the knees may be slightly bent (flexed) on the downward thrust, and straightened (extended) on the upward bounce. This may be gradually increased so that the knees and hips are flexed and extended. The legs may be alternated; first the right then the left alternately flexed and extended.

To twist the student slightly as he is bounced, hold the ankles as above. Turn both legs at the hip, keeping knees locked, just one way then the other as the student bounced. One leg may be alternately crossed over the other. Do not turn so far so as to turn the student completely over. If she is turned to the side-lying position, this is far enough.

Watch that the student's head is not abruptly turned to the side. Also, when bending the legs do not force them to bend or straighten forcefully. They should almost fall into place. If the student resists a movement do do not attempt to take the legs beyond this point. The legs may be flexed or extended, without bouncing, so that the student is aware of what is to happen and may more readily accept this action. Encourage the student to assist in these movements if possible.

The rhythmical motion of the bounce and the twisting or bending is most important. The student will accept consistency in bounce and manipulation much

easier. The teacher must be sure of the movements to be performed and the appropriate actions to take.

(3) SITTING BOUNCE

Position - The student is seated on the trampoline, on or near the middle. The teacher is seated behind the student so that the student is sitting between the teacher's legs (supported). Or the teacher stands, behind or in front of the student on the trampoline outside the middle area of the tramp bed. (unsupported).

Objective - To increase awareness of self and bodily movement in the sitting position. This activity can also increase the postural balance and strengthen necessary sitting and eventual standing.

Action - The teacher lightly bounces the student on the tramp. In the supported postion the teacher may gently manipulate the student's body, bending at the waist, moving forward, backward and to each side, touching body parts, raising and lowering or extending them to the sides, forward or back.

In the unsupported position the teacher proceeds as with the lying actions. Watch always that the student is able to maintain the sitting position with little difficulty and is able to support himself in the sitting position. The force of the bounce may be increased as the student is able to accept the change and maintain position. The teacher may vary the directional force by bouncing on different points on the tramp bed and moving about as she bounces.

Other positions which may be similarly used are the kneeling and hand-knee creeping positions. The student can assume these positions while bouncing and receive many of the same objectives as with sitting.

(4) BOUNCING FOR RELAXATION

A student who is having difficulty accepting a new environment such as the trampoline and its varied movement possiblities will be tense and excited. This anxiousness is a definitely inhibiting learning progress. The student is unable to accept the movement stimulation being offered. In this case, and possibly in all initial encounters on the trampoline the student will need to be physically relaxed before the movement stimulation can be effectively accepted. Also, the student who is hypertonic - having excess muscle tone, spastic or athetoid cerebral palsied, or affected by some form of paralysis will need some relaxation and relaxation training in order to be able to accept learning stimuli.

Position - The teacher is sitting on the trampoline bed with or near the student who is lying on his back in a comfortable position. If applicable, the teacher may support the student or hold the student while bouncing.

Objective - To promote the occurrence of relaxation and security in movement for the student.

Action - All bouncing movements for relaxation will need to be rhythmic and light. The feeling will be continuous and flowing. The teacher must support the student as much as possible, in particular the head and arms. Along with the bouncing movements the teacher may slowly rock the student from side to side. When the student is lying on his back this side to side rocking can be accomplished as the teacher lightly bounces first on the left foot, then on the right. Do not attempt side to side rocking until the student has gained some acceptance of the bouncing movement. The rocking should be in rhythm with the bouncing.

This activity can be particularily useful with the student who may take awhile to accept a new situation. The movements are not overly exciting yet offer some more movement stimulation. This activity is most effective when used as the basis for developing more active and controlled movements on the trampoline. Taking care not to over excite the student, the teacher may gradually increase the force of the bounce, still keeping the rhythm. If performed properly the student will be receiving more active movement stimuli without becoming over excited. This may take a period of time and gradually increase the amount of time the student is on the trampoline along with increasing the intensity of the bounce. For the student who lacks trust and security in his or other person's movement this activity can be most beneficial.

(5) ACCOMPANYING ARM AND LEG MOVEMENTS

As the student is being bounced in the sitting or lying position the arm and/or legs may be passively moved. The support and assistance are the responsibility of the teacher. The student may be encouraged to assist with the movement if this is an appropriate objective for the student.

Position - The student is sitting or lying as in the previous two activities. (#3 and #4).

Objective - To present the stimuli of movement of the arms and legs in conjunction with other bodily movement. This may be the first introduction of coordinated movements of the total body leading to or in association with the introduction of crawling, creeping, and rolling. The introduction of body image and laterality.

Action - One or two persons may be used to move the student's arms and legs. All movements are simple and essentially non-directed.

Arm Movements - The teacher should be holding the student's wrists. Some support of the student's arms can be given when the teacher is seated behind the student. The student's arms can rest lightly on the teacher's arms and move with them. Movements are free flowing movements within the student's range of motion.

CLAPPING - The teacher brings the student's hands together at the student's mid-line at about chest height. This may be changed so that the hands are

raised or lowered and brought together. above the head or below the waist or any where in between. The hands may also be brought together to the left or right of the student's body. Make all movements deliberate and as rhymical as possible.

SLAPPING - The hands may be placed or slapped, separately or together, at various points on the student's or teacher's body, or on the trampoline as the student is bounced. The points and combinations of hand placements are not limited. The hands may be placed on the knees of the student on one bounce, held for a bounce then placed on the knees of the teacher. Crossover, placing the student's right hand on the teacher's or student's left knee, leg or ankle, then repeat with the other side. The hands may be placed on the bed or head to reach and move. Touch legs, arms, toes, ankles - opposite and same sides. Compare with touching similar parts on the teacher. This helps the student relate to another person; she is able to feel if not see other persons and discover likenesses and possible differences. The teacher names part and may even make up a rhyme or sing to go along with the movements. Although the variety of movement explored is important, attempt to keep as much consistency as possible! Do not attempt to introduce the student to too many stimuli and new concepts all at once.

(6) STANDING BOUNCE

This activity should be used only with the student who has sufficient leg strength to stand and a minimum amount of trunk strength to maintain an erect stance. The student must have complete head control and balance. The purpose of this activity is not to lead up to the jumping skill, but may be used for this when the introduction of jumping is an adequate objective for the student.

Position - The teacher stands with the student facing the same direction as the student. The teacher holds the student's arms at the elbow or at the wrist. If the student has sufficient dynamic balance the teacher may stand facing the student holding his hands. If necessary the teacher may hold the student's elbows as the student's interlock this grip by holding the teacher's elbows.

Objectives - To promote stimulation of movement in the standing position. To increase balance possibilities while standing. To increase the postural strength of the legs, hips and trunk.

Action - The teacher must consistently watch the placement and position of the student's legs and feet. If the student is unable to support herself and stands without some difficulty, putting joints out of normal position, this activity is contraindicated until these difficulties can be corrected.

Supporting the student as much as is required the teacher bounces on the trampoline with the student. The teacher provides the bouncing force. The student's feet should not leave the trampoline bed. The teacher may add variety by shifting her weight as she jumps or move the student's hands as she bounces. A different sensory input is afforded when the student's arms are moved up above the head, out to the sides or down to the sides.

If the student is able to support himself in a recovery phase of jumping begin to get the student's feet off the bed on the bounce. The teacher needs to push down with a quick forceful action which will rebound the student off the bed. This should be light at first, but may be increased as the student accepts it and the teacher is able to perform the maneuver.

Other movements may be added and performed simultaneously with the jump of the student. The student's hands may be pulled slightly so that he twists while in the air. The student may be pushed or pulled lightly so that as her feet leave the bed she moves forward or backward. By pulling on the student's arms and moving with him the teacher and student may jump in a circle moving in either direction, left or right. As these movements are performed the teacher keep up communication with the student concerning the direction of movement and the actions being performed. The teacher may sing or make up a rhyme about the performance.

The bouncing of the student while standing may also be accomplished as the student is unsupported. The teacher may want to use spotters around the trampoline or a safety belt. The student stands just a little off the center point of the tramp bed and the teacher stands opposite him, just a little way from the centerpoint. The teacher bounces lightly at first. Watch the student's stance and ability to support herself and make adaptions to movement. As the student is able to, increase the force of the jump, do not go beyond the ability of the student.

This activity calls for the independence of the student. Although independence is appropriate and necessary for the student, it should not be forced upon him. Only the student who has security and trust in the teacher should be put through this activity. The introduction of this type of independence for the blind and deaf-blind student is quite important and can lead to a greater amount of independence when the introduction is gradual and the student is aware of the purpose for the activity. The student must be willing and able to work with the teacher. It is the teacher's responsibility to have this self trust and security built within the student so that this activity and future steps at independence can be successful.

MAT ACTIVITIES

(1) TUMBLING WITH THE TEACHER

In order for these activities to be performed properly and safely the teacher must take care to support the student's head and neck. Also the teacher must be aware of the movement and position of the student's body as well as her arm. This is necessary in order to avoid injury or other difficulties for the student. These activities are of essence quite physical and vigorous. The student will receive the feeling of being tossed about and possibly strike the mat roughly. These are common, normal occurrences in normal play and should be expected. The

student, with the help of the teacher, should learn to accept the vigorous, rough, movement. With experience the student will learn to enjoy this type of activity and may eventually overtly seek out vigorous play.

Initially respect the feelings of the student as to the acceptance of rough play. Some students may take to it quite readily and others may be initially quite fearful. In either case the teacher is responsible for the introduction of a safe, secure means of play and learning for the student.

Position - The teacher in a sitting position cradles the student in her arms, the student's body perpendicular to the teacher's. The student is lying on her back in the teacher's arms.

Objective - This activity provides the student with a variety a stimuli elicited from the tumbling movements. Directions change frequently for the student and movement may be in two planes at the same time, thus stimulating more areas of experience.

Action - For the teacher, movements are backward and to one side or the other. (1) Roll backwards and over the right shoulder, kick your legs up and over to the right to provide momentum. You should come to a sitting position after rolling. Take care to watch for the student's head. Take the weight of your body on your shoulder first then your elbows, always holding the student in your arms securely. (Roll backwards and over your left shoulder, returning to a sitting position after a log roll. These maneuvers may be repeated several times. You may stop between each to make then a continuous roll in a circle.

The teacher may wish to practice rolling with a bag or mat before attempting this activity with a student. Always be aware of where the student's head is and where you place your body weight. It may not be advisable for some teachers to lie on a student.

(2) LOG ROLL

This is another teacher assisted roll. The teacher performing the roll with the student firmly in his grasp. This stunt may also be done without the student rolling with the teacher.

Position - The student lies on his back. The teacher kneels over the student. The teacher places his arms under the student's arms and around his back. One of the student's legs is positioned between the teacher's legs. The teacher holds this leg with his legs. The teacher supports the student but does not hold tightly.

Objective - The log roll is a developmental skill which is important to eventual crawling, sitting, and walking skill development. This activity provides a basis in movement experience for the directional movement required for the log roll.

Action - The teacher executes a log roll (sideways roll) along with the student. The student remains suspended in the teacher's grasp throughout the movement. Be sure to allow yourself enough room on the mat to roll with

the student. The two of you will take more room lengthwise than either one of you alone. A long mat or series of mats 16-20 feet in length is best for this activity. Roll in both directions.

Action - Without the student suspended by the teacher the action of the student is similar. The teacher positions the student and provides what force is necessary. Lay the student on her back on the mat. To roll the leg and arm must be raised and moved in the desired direction of movement. To roll to the student's left the left arm is positioned at the student's side or above his head. The right arm is brought across the body. Bend the right leg at the hip and knee and bring it over, this will start to turn the student's body. Be sure the student's head turns to face the direction of movement. Start the student over and allow gravity to continue the movement. To return from the stomach the left arm is brought across the back and the left leg. Pulling lightly at these points will return the student to the back lying position. Repeat the roll in the same direction or return to the starting point by rolling to the right, reversing the direction above.

(3) SITTING WITH THE TEACHER - Assisted Arm Movements.

The assisted arm movements which are described in number five (#5) of the trampoline activities may also be done on the mat alone with or instead of their use on the tramp. They should be used in the place of the on-the-trampoline activities when the student is especially fearful of the trampoline. The fear and anxiousness would be greatly inhibiting the student's ability to take in learning stimuli. Other activities which may be performed on the mat will be given below. Each of these may just as easily be performed on the trampoline.

Position - Student sits between the teacher's legs. The teacher supports the student and holds the student around the waist, or upper arms.

Objective - To increase the experiences leading to the development of laterally, directionality-a concept of movement through space.

Action - The teacher tilts the student to the side. The student should react by putting his hand out to stop his "fall". If he does not do this put it out there for him. This is a reflex and may be accentuated by holding the opposite arm up and lightly pulling back toward yourself. Do this to both sides. The tilting to the side may also be done with the hands held to the body. This will provide more stimuli to the hips and trunk.

The direction of forward and back and the use of the legs in movement are introduced through rocking. The student may be held in the teacher's lap in a tuck position. The teacher holds the student from behind the student's knees. The teacher lays back, bringing his legs up and the student back with him. Return to sitting then bend forward with the student. Be careful so as not to bend the student too far forward, which may cause strain or injury.

(4) BACK LYING - Leg Movements

These activities are accomplished the same as those in number 2 of the trampoline activities. The bouncing is excluded on the mat.

(5) FORWARD ROLL

This activity is performed as it is described in the Manipulation Activities Section, page , except the object here is for the general movement experience of moving through space and body awareness. Follow the given directions to guide the student in the roll. The force is totally provided by the teacher. No attempt should be made at this level to get the student to perform on his own. This is simply not the expressed objective of these activities.

TEACHER SUPPORTED ACTIVITIES

These activities are definitely for the teacher who is physically able to perform them with a student. Even for the most physically fit teacher a good deal of caution will need to be taken to prevent a child from falling. The teacher must be sure that her strength is great enough to hold, support, and move the student safely and effectively. If the teacher is just not capable, these activities should not be attempted. The other activities given previously in the General Movement Section will suffice for the student's needs.

(1) SWINGING

The student may be swinging from the arms or by the legs. In either case the teacher must be sure to have a strong grasp.

Position - The teacher is standing behind the student. Reach around the student's trunk from under the arms. Grasp your hands tightly and hold.

Objective - To provide a stimulus of moving freely through space.

Action - The teacher leans back slightly and begins to step around in a circle. The student is lifted and swung around as the teacher spins. Watch that you keep your balance and that there is enough room, free from obstacles. The student should be swung only 2 or 3 times around before stopping. This may be repeated. But only after the student is stopped and observed to have no ill effects from the spinning. The student may have difficulty regaining equilibrium.

Action - Holding the student, by the legs in front of you, spin him and yourself around as above. The student is held about the waist. The teacher's hands should be clasped behind the student's back. The student's legs straddle the teachers at the waist.

Do not suspend a student by the ankles and swing her in this manner. The chance for injury is just too great. It may look fun but it is difficult to return a student to the floor or mat, and it is to hand to hold a sure grip on the student's ankles.

(2) TURNING

Position - One of three positions may be used to support and turn the student. The position used depends upon the ability of the teacher. Essentially the same movement experiences may be obtained from either of the positions.

(a) "Fireman's carry" - The student is held on the teacher's shoulders, lying perpendicular to the teacher's body.

(b) The student is cradled in the teacher's arms as in number 4 of the Mat Activities.

(c) "Piggy Back" - The student rides on the teacher's back. The student's arms are suspended over the teacher's shoulders. The teacher holds the student's upper arms. The teacher may hold the student by the legs from the rear if the student is capable of holding the teacher around the neck. If possible the student may hold onto the teacher around the waist with her legs.

Objective - To provide the movement experience of moving through space suspended or partially supported. The sensations are felt in the head in the balance mechanisms, and in the joints of the body. (Vestibular stimuli).

Action - As with the swinging about, the student is spun around. The teacher may move about the room, stop, change direction, turn full then half turns and make as much variety of turning movements as possible.

(3) OBSTACLES

As the ability and size of the teacher allows the following activity may be performed. The student is held in one of the positions, A,B, or C, as given above in activity number two. The teacher, with the student walks over, on, under a number of obstacles or pieces of equipment in the room. Examples are: a balance beam, stairs, bench, parts of an obstacle course, etc.

(4) TOSSING

This is an extremely risky activity which is most effectively performed with a small child by a teacher who is physically capable. The activity should definitely not be attempted unless the teacher is capable of controlling the flight of the student's body and safely catching and holding the student. Do not under any circumstances attempt this activity unless you are physically capable of a successful performance! The effects for the student is not worth a possible injury which may occur.

Position - The student is held by the waist. The teacher stands on his knees or on his feet. Be sure you have a stable base and are ready to accept the student's force of landing.

Objective - To provide the student with the experience of free movement through space. The student moves for a short period of time unsupported.

Action - The teacher tosses the student up in the air. At first the student is simply raised to shoulder level and released. The teacher catches the student almost immediately. This should be repeated several times to give the student the feeling of what is to happen. As the student accepts and the teacher is able to safely perform, the distance the student is tossed may be increased. In actuality the student should never be tossed more than 4-6 inches from the teacher's hands. Always be very sure that you are able to accept the student's weight and control the landing. Never attempt to go beyond your ability to completely control this entire activity.

This activity may be performed on a mat or on the trampoline as the teacher and student are jumping. Always use great caution when performing this activity. But do not use it if you are capable just because of the apparent danger. The teacher may practice with a weighted bag a life size doll in order to gain experience. The possibilities for movement experience for the student should be allowed if at all possible.

OBSTACLE COURSE

The use of a specialized course made up of pieces of equipment which serve as obstacles through which the student will be asked to maneuver, is an essential part of any program for deaf-blind, blind and sensory impaired students. Even for students not handicapped by sensory impairments an obstacle course is an essential part of the Motor Development program. For the deaf-blind, and blind students the obstacle course cannot be excluded. The importance of the obstacle course lies in the development of not only physical-motor skill but the mobility skills which are so necessary for individuals who are visually handicapped.

Many students may not have obstacles in their home with which they have to contend. Not all children are allowed to explore stairs, if the student's home has stairs, many are not allowed to climb on chairs or tables. Some students will not have a yard in which to explore. Oftentimes many handicapped students are not allowed to move about freely in their home environment due to a lack of continuous available supervision, or to the inability of the parents and other family members to recognize and understand the needs of the handicapped child.

The Physical Education-Motor Development program needs to include the obstacle course as both a movement experience and as a learning experience. It's use should be a regular part of the Physical Education period or as a part of the daily routine.

OBSTACLE COURSE EQUIPMENT

In actuality almost any object which requires that the student move on, over, under, around, between, or through it can be included in the course. Many educational supply and physical education or recreation supply companies have equipment which may be purchased to be included in an obstacle course. These pieces must be sturdy and well built. If the student is to move over an object it must be able to withstand this weight and be structurally sound. Objects which are stable and stationary are suggested. If there is a chance of falling or slipping, standard tumbling mats must be included as equipment and used as basic parts of the course.

Many obstacles may be made by an industrious teacher. All that is usually needed is some wood, 2 x 4's, plywood, some nails, rods or dowels, etc.... Various pieces of equipment usually found in the gym or classroom may be used as part of the course, by adapting them or using them as they are. A board of any size, width or length may be used as a balance beam; a table can be walked over or crawled under; poles can be suspended between chairs to step over or crawl under; chairs may also be placed so that the student has to walk around or over them; parallel bars can be covered to make a tunnel or lowered so that the student has to step or crawl over. Planks of various sizes can be placed on the floor to walk on. A flight of stairs or therapeutic steps may be used as part of the course. The use of materials and available equipment is dependent upon the teacher's needs and versatility.

OBJECTIVES FOR OBSTACLE COURSE

The obstacle course is designed to elicit responses which are specific to movement skills and varied according to the individual. The prime general objective would be to provide a large variety of movement experience within one activity. The student specifically will learn to accept and cope with objects in his environment. All of the regular objectives are included; self-image, body awareness, agility, balance, simple skill development, laterality. The basis for eventual mobility is gained. The student must walk or somehow move around the course meeting obstacles and somehow overcome them. These same things will occur as the student moves about a room, a house, a school, on city streets and sidewalks.

An objective of the obstacle course not normally found in teaching movement skills is the development of a sense of series relationship. This concept is not totally realized but it's basis may be set and transferable to a more cognitive use in the classroom. The student moves from one situation (object) to another. The object or the movement from one object to another causes change of direction, to the sides or up and down. There is a beginning and an ending. A series of steps, objects, follow one after the other. This idea of series movements will occur both in the more difficult movement skills and in other areas of the student's school and post school experiences. Without saying that the obstacle course is "normalizing" I will say that it is at least a tool for making the handicapped person's life a little easier for having experienced it's use as a learning activity.

PROCEDURES FOR USE OF THE OBSTACLE COURSE

The obstacle course should be made up of at least six to eight pieces. More pieces may be included if desirable. The working space of the room or gym is the limiting factor for the course size. All pieces are put together in a connecting fashion. They do not need to touch or actually connect. But each object should lead into the next. Variety of movements required to negotiate the course is the key to the working of the course. Build in direction changes and change the sequence, direction and placement of the course for each day it is to be used. Contrary to the common thought, the student should not be able to recognize a set sequence of objects. The "outside world" does not allow her this advantage and neither should the school.

Under no circumstances should the obstacle course be considered the complete program of Physical Education-Motor Development for any student. It's effective use lies in its combination with other activities of motor development or physical education. By the same token no student should be deprived the use of the obstacle course. Walking or crawling are not prerequisite for the use of the course. The student's needs for the movement experience are the criteria which may be considered. All students will require varied amounts of assistance in negotiating the course. Each student should be afforded the movement experiences no matter what the handicap.

It may be of help to both the teacher and student to have two or possibly three different courses. Each course would be designed for a specific level of ability or for specific needs. There may be two levels of difficulty and then one course which incorporates many tactual and sensory experiences. A course may be designed and utilized so that the student has to perform a specific skill in relation to a piece of equipment, no matter where it is found in the course (i.e., on a bench the student must crawl, on a board he must walk, on a climbing box he must climb up, then creep across, etc.). These activities call for a higher level of cognitive functioning, but are useful and effective.

Again, the use of the obstacle course is up to the teacher and the limits of the classroom or equipment budget. The resourceful teacher can easily find many objects from which to form a course. Other pieces can be adapted to suit the needs of the class. Whatever the situation, the student should not be deprived the experiences which can be attained from this activity.

EARLY DEVELOPMENTAL TRAINING

There are several developmental skills which preclude the more dynamic of the levels of development usually referred to by developmentalists. These skills play an important roll in the eventual achievement of these goals. These skills are patterns or parts of the whole which are integral factors in the developmental process. They are the steps in the spiral staircase leading up to the next level of development.

The activities of general movement in the previous section of this program can be closely related to these skills. However, these skills are just that, skills, and not simple activities. They are specific steps to a goal and not general procedures. The activities to reach these goals will be organized into the areas of locomotion, manipulation, stability, and perceptual-cognitive. The goals within these areas lead up to the first level of development in that area. In locomotion the goals lead to walking, in manipulation they lead to object control, in stability they lead to general control of the body in a stationary position; the perceptual-cognitive goals lead in a general nature to skills in perception and concept development. The perceptual-cognitive goals may go beyond the area of physical education-motor development but are actually interrelated areas of development where physical-motor factors play an important role.

THE USE OF DEVELOPMENTAL GOALS

For the student who is not to the first prominence of development in the areas described the proper goal should be given. The goals are presented in developmental order. Find the point at which the student is currently performing and work on the activities for the next goal. The student should be performing a skill consistently well before it can be said that a goal has been reached. For the student who has developed splinter skills, skills learned out of developmental order, find the appropriate goals below and work on these along with maintaining the present skill. This will make it possible for the student to build a more adequate base while still holding an already-achieved level.

Use these activities only when necessary for initial developmental achievement. Their use will prove unmotivating for the student who is far above the first level of development. It will be a good idea to use related activities from the General Movement category. These will help strengthen the student's efforts and experiential advancement. The general movements can be used beyond the achievement of the goal. The activities for the goal should only be used intermittently as a means for review or for purposes of overlearning.

These activities are taken from an adapted, re-organized version of the Guide to Early Development Training, James Tilton, Donna Liska, and Jack Bourland, Eds, Wabash Center for the Mentally Retarded, Lafayette, Indiana. The particular activities for motor-development were written by Miriam Bender, PhD, RPT of Purdue University. My thanks and special acknowledgment go to these people and the other contributors to this well written manual.

LOCOMOTOR ACTIVITIES FOR EARLY DEVELOPMENT

These goals are designed to lead to the successful achievement of the performance of creeping and eventual independent walking. The activities in the stability area will in some cases overlap or be quite the same as in this section. For this reason goals which are similar or which lead to development of the same area should be used together. The third goal in locomotion and the first in stability are the same. Also, the development of the fourth goal in locomotion is closely related to numbers one in stability. The stability goal is dependent upon the achievement of the locomotion goal in this case.

All the activities of this section and the others should be followed as they are described. In some instances where visual handicaps inhibit the use of motivational objects other forms of motivation should be found. Where sight and hearing are present to any degree use it to its utmost potential. Objects which provide pleasure, much stimuli-visual and auditory are important. Deal with the student's needs to achieve as much as possible. This will more easily internalize learning and make a strong foundation for further learning.

The format will basically follow that of the Guide to Early Developmental Training. Use equipment as given. No specific equipment is necessary except for a mat or a carpeted floor.

CONTENTS LOCOMOTION

ACTIVITIES

(1) Goal: The child is able to hold head erect with support when held over your shoulder and when lying on his belly.

1. Keep child lying on his belly much of the time to stimulate him to raise his head.

2. Gently lift his head and turn it to either side. Encourage him as you work with him. Give him only as much assistance as he needs to carry out the movement. Repeat several times each hour, turning his head from side to side.

3. Stimulate with a sound or toy from directly in front of his head. Help him lift his head and turn it to find the toy with his eyes. Let him do as much of the movement as he can. If he can lift his head but not hold it, help him hold it up long enough to see the toy and watch it briefly before lowering it. Repeat several times in succession.

4. Place the child on a table on his belly with his head extending over the edge and supported level with his body. Pad the table with a blanket or quilt. Lower his head enough to put a little stretch on his neck muscles. Then say "up" as you help him lift his head. Try to get the child to hold the position even momentarily. Repeat several times.

5. Place child on his back. Dangle a shiny or bright object, preferably one which makes a noise, in front of his face. When you have his attention, slowly move the toy across in front of him. Try to get him to turn his head and follow the toy with his eyes. Your aim is to get him to follow the object from one side to the other as you move it.

6. Keep child lying on his belly as much as possible. Play with him, talk to him. Place a brightly colored mobile where he can see it when he holds his head up. A mobile of objects which make noise can also be used.

(2) Goal. The child is able to lift up head and upper chest when lying on his belly.

1. With the child on his belly, place his forearms close to his sides in a position in which he can push up on them.

   (a) Dangle a toy in front of him, raise it higher and higher to encourage him to lift his head and chest and to push up on forearms.

   (b) Once he has raised his head, help him lift it higher. His forearms will tend to move into position to take his weight. When this happens hold them there with your hands while he holds up his head. Talk to him, praise him, encourage him to stay in this position as long as he can.

   (c) Sit down and place the child across your knees on his belly. Encourage him to arch his back and hold his head and legs up high.

   (d) With the child on his belly and up on his forearms or hands, play "peek-a-boo" with him by dropping a scarf or soft cloth over his face and him to pull it off. You may need to start by covering your own face first.

   (e) Tuck the child's knees under him by lifting up on his hips and then pressing his buttocks back toward his heels. In this position, encourage him to lift his head; help him up onto his elbows.

(3) Goal: The child holds head erect when supported in the sitting position.

1. Support the child in sitting position by holding his shoulders. He may be on your lap, on a table, or sitting on the edge of a table with his feet dangling.

   (a) Holding him by the shoulders, tilt him backwards just far enough for him to lose his head balance. Then slowly bring him upright again, encouraging him to pull his head back to balance again. If he cannot bring it forward unassisted, tilt him far enough forward for gravity to help him.

   (b) Tilt him diagonally back to one side, twisting him slightly so the opposite shoulder moves farther back until he loses his head balance. Then slowly bring him back, encourage him to regain his head control. Repeat to the opposite side.

   (c) Tilt him directly toward one side until he loses his head balance, then slowly bring him upright again, encouraging him to regain his head control. Repeat to the other side.

2. Sit in front of a mirror with the child on your lap. Point out his reflection in the mirror. Say his name as you do so, or say some other appropriate word: baby, little girl, little boy. Encourage him to lean forward and pat the mirror. A shiny object or flickering light source may be used to hold the child's attention.

NOTE: Make a game of these, repeating the tilt in each direction several times to give him practice in regaining his head balance from each direction.

(4) Goal: The child moves one limb across the front or back of the other limb, or pulls both limbs together.

1. Side lying: Place the foot of the upper leg on a hassock, chair or supported by yourself. Then ask the child to raise the lower leg until it touches the supported leg. Reverse sides.

2. On back or stomach: Have the child spread his legs apart or swing one leg out to the side. Place a weight slightly above the knee or ankle of the one leg and ask the child to slide the weight with his leg into the other leg. Slide two weights one with each leg simultaneously to touch each other.

3. Standing: With feet apart ask the child to slide one leg in next to the fixed leg. Again a weight placed at the inner surface of the foot may be pushed past the other leg. Alternate with feet apart.

4. Exaggerated walk: Forward and backward. Set up markers, i.e., stepping stones, etc., which if the child follows will make the child cross one leg in front of the other or behind one another as he walks over the marks forward and backward.

(5) Goal: The child is able to roll from back to either side and back again.

1. Carry the child around with you for a while to stimulate a response to changes in position. Stop, start, change directions, turn around, back up, lean over, straighten up, sit down, stand up again. At the same time change the child's position in your arms from time to time---erect over your shoulder, lying down in your arms, head one way, then head the other way. Carry him on your back for a while, then carry him on your chest.

2. Start with child lying on his back. Roll him back and forth from side to side, talking playfully with him all the while.

(6) Goal: The child is able to roll over, from back to belly in both directions.

1. With child lying on his back, begin rolling him back and forth toward one side. Each time roll him further until gravity rolls him over onto his belly. Encourage him then to lift his head and get his arm out from under him. Help him only if necessary. Repeat the activity as often as he tolerates it without resistance. Make a game of it. On alternate tries roll him toward the other side.

2. Assisted rolling - Begin with child lying on his back. Turn his head to the left and tilt his head up. Pull his right hand across his body and up just beyond his left shoulder. Hold him in this position until child makes some attempt to complete the roll, then assist only as needed until he has completed it.

   Reposition him on his back again and reverse the procedure to roll him over toward his right.

3. Place child on his side. Show him an attractive toy and then place it just out of his arm's reach and at about level with the top of head but positioned so he can still see it. Encourage him to reach for the toy with his upper arm. As he reaches he will roll over. Let him play with the toy briefly, then reposition him. Make several tries to the left, then several to the right.

   When he can do this easily, start him from a position midway between back and side lying propped with a pillow or with your hand, then proceed as before. When he can roll easily from this position, start him from back-lying. Show him the toy; as he reaches for it move it so that he must roll over to reach it. Be sure to let him have the toy for a time after each successful roll.

4. Roll over with leg leading. With child lying on his back, lift his right leg with the knee bent and cross it over the left, pressing his knee toward the mat until his right hip is raised. Hold in this position until the child rolls over. At first you may need to turn his head to the left, tipping his face up, to emphasize the movement. Give only as much assistance as he needs to accomplish the roll. Reverse the procedure to get him to roll over to the right. Be sure to give equal practice rolling in each direction.

5. With the child lying on his back, present a toy just out of arm's reach, then move it to one side and slightly above his head, keeping it within the child's field of vision. Encourage him to roll over in order to get it. Give him only as much assistance as he needs to accomplish the task; often it is enough just to keep him from rolling back once he gets started. Be sure to work with both right and left sides. It may be necessary to either substitute tactual and/or auditory stimuli for those who are unable to respond to the visual stimulus.

(7) Goal: The child is able to roll from belly to back in either direction.

1. By turning his head and shoulders first---Place the child face down on the floor. Draw his left hand across and under his body at shoulder level. Turn his head to the right and tip his face up. Hold him in this position until he rights himself by rolling over. Reverse the procedure to help him turn over from the left. Practice from both sides equally.

2. By pushing with arm and leg---Place the child face down on the floor. Turn his head to the right. Place one of your hands under the right side of his pelvis and lift them sharply in order to stimulate him to reflexively bend his right hip and knee. Once he has responded continue to hold the right side of his pelvis up and also hold his right foot against the floor. Encourage him to turn himself by pushing with his right arm and leg to turn over. Reverse this procedure to assist him to turn over from the left.

3. Active assisted rolling---With the child lying face down, hold a sound toy (or other attractive object) above, behind and a little to the right of his head and shoulders. Attract his attention. He should be able to see the toy by lifting and turning his head. Encourage him to turn over to reach for it. Present the toy alternately on the right and the left. Assist him when needed, but only as much as he needs to succeed by working hard at the task.

(8) Goal: The child is able to crawl on his belly progressing from arm and leg on same side to pulling and pushing with the opposite arm and leg (cross-pattern).

1. Reflex-assisted crawling

   a. Place the child on his belly on a smooth floor or use two mats, end to end. He should have his shoes off. Toss or place a toy out about five feet in front of him and call his attention to it.

   b. Place one hand under the right side of the child's pelvis and lift sharply. His right hip and knee will bend. Shift your hand to the sole of his right foot to give counter-pressure.

   c. With your other hand lift the left side of his pelvis sharply, moving him slightly forward at the same time. Then shift this hand to the sole of his left foot.

d. Continue to stimulate reflex bending of one hip and knee as you stimulate straightening of the opposite hip and knee.

e. Do not be concerned about his arm movements. They will tend to parallel the leg movements. When the child reaches the toy allow him to play with it for a while. Then toss it out in front of him again and assist him to crawl toward it once more.

2. Gravity-assisted crawling

Hook one end of a wooden sliding board over the top rung of an adult chair or over the second rung of one of the small metal climbers. Place a mat under the low end. The upper end should be 18-24 inches higher than the lower end. Place a toy about two feet beyond the end of the slide. Place the child on his belly, head down, at the top of the slide. Call his attention to the toy. Encourage him to wave his arms and kick his legs. Any movement he makes will serve to make him slide downhill a little at a time. He will soon get the idea that if he keeps moving he can get somewhere. When he reaches the toy praise him and let him play with it for a while before repeating the activity. If the child is dressed in long pants it will be easier for him to slide.

3. Active-assisted crawling

Place the child belly down on a smooth floor, or use two mats placed end to end. Place a toy out in front of him about two or three feet beyond his reach. Talk to him. Encourage him to make an effort to reach the toy. If he draws one leg up under him place your hand against the sole of his foot and hold it to the floor (apply slight pressure to resist sliding of his foot). When he straightens his leg he will push himself forward. Continue to help him in this way, making a happy game of his efforts to reach the toy. When he achieves his goal allow him to play with his prize for a time before repeating the activity. Gradually move the toy further out in front of him as he begins to move more purposefully. A ball is often a good motivator when rolled out in front of him.

4. Encourage him to crawl by keeping him on the floor on his belly. Give him rolling toys which will stimulate him to crawl after them. Children moving up to this developmental level should spend at least a total of two hours a day on the floor on their bellies to stimulate crawling. It should be remembered that the child's environment and position should be varied throughout the day.

5. Roll a ball or toss a toy under a chair or into some restricted space and encourage the child to crawl after it and get it out.

6. Short tunnel - Take a cardboard carton and remove the top and bottom. Place the carton on its side and coax the child to crawl through the tunnel. Hoops can also be used in this way. A blanket may be spread over a table or a line of 4-6 chairs placed back to back to form a tunnel also. Be sure to leave two ends open.

NOTE: Because of spastic leg muscles which prevent earlier development of crawling, some children have taught themselves to roll from belly to back before they have learned to crawl. Such children resist being placed on their bellies and immediately turn over. A "roll bar" can be helpful to prevent rolling. This can be made from a yard stick, a flat extension of a curtain rod, or a broom handle. Fasten the yard stick, curtain rod or handle across the child's upper back. Many times it can be run through the straps of his overalls and pinned securely in place. Such a "roll bar" effectively prevents the child from rolling over and keeps him on his belly without otherwise restricting his activities.

(9) Goal: The child begins to push back onto her knees when she is lying on her belly and propped up on straight arms.

1. Assisted, from tuck position, with child lying face down; place one hand under each hip. Lift him sharply to reflexively bend his hips and knees under him, then pull his hips back into "tucked" position. Encourage him to push up with both hands while you stabilize his hips. If needed, supply some support under his chest or forehead to get him started. Help him get his balance in this position and maintain it as he looks around.

(10) Goal: The child intentionally flexes and extends knees, and thrusts legs forward.

1. Leg Thrusts: Double leg stretch or thrust (child lying on back) - Bend the child's knees up against his stomach. Hold them gently in place until he starts to resist. Then let him push his legs to the floor gently and evenly against your slight resistance.

2. Single leg thrust - Same as above. Hold down the leg (at the knee) not being activated.

3. Alternating leg thrusts - Use same procedure, hold non-working leg.

4. Bicycling - Begin with one knee bent and other straight. Give resistance to the one that is straightening by slightly pushing against the movement of the leg.

5. Knee Flexion: Lie on stomach, legs straight. Stabilize hip and bend knee, drawing foot slowly up to the buttock. After doing this with each foot, perform with both legs together.

6. Place a weight over the ankle and ask the child to flex the knee while lying on stomach, raising the weighted ankle. Watch for substitution from the hips by raising the hips from the ground.

7. Stand and without bending at hips, flex the leg at the knee, kicking the foot back and up as far as possible.

8. Knee Extension: Lying on side lower knee flexed, upper leg supported, place a weight in front of the flexed leg and have the child push the weight, until the lower leg if fully extended. Lie on the other side and repeat above.

9. With child on his back, knees flexed and feet on the floor with toes against the wall, have the child push his body along the floor away from the wall, extending his legs.

10. Double leg pull: (child lying on his back) Grasp child's legs firmly and draw them downward until they are straight. Then give a tug and hold them gently.

11. Single leg pull: Same as above but only one leg at a time. Hold the knee down of the leg that is not being activated.

(11) Goal: The child uses stomach muscles efficiently to move legs.

1. Lay the child over a chair or bench with the small of his back meeting the edge of the chair. Help him by holding down the upper part of his body.

2. Have the child lie on his back. Draw a leg up with the knee bent. Bend the thigh closer to the body against resistance, i.e. a hand, towel or strap placed just above the knee. Alternate legs, then perform bilaterally.

3. Lie on back, legs extended, knees straight. Lift each leg up and lower. Each leg should be raised to a right angle with the rest of the body if possible. Resistance applied at the thigh just above the knee may also be added when raising leg.

4. Stand and kick one leg forward, keeping the knee straight, then down then alternate. Give the child a goal as to how high to raise the leg, and as the movement becomes smoother, increase the range of the goal. Keep back straight.

5. March or run in place: raise the knees as high as possible and keep the back and shoulders straight.

6. Lie on stomach. Stabilize the pelvis and have the child raise a leg as high as possible, with the knee straight, up from the floor. Alternate the legs, then raise both legs at the same time.

7. Lie on the side. With knee straight and body in total alignment, stabilize the pelvis. Keep upper trunk immobile and extend lower leg back as far as possible -- or set a physical goal the child must touch with his heels. Then extend both legs back together. Roll over and do the same task on the opposite side.

8. Standing: Hold onto a chair, table top, etc., keep back straight, stabilize upper trunk and arms, then extend a leg away from body to the back; keeping knees straight and foot on floor. Alternate sides. Then kick to the back -- establish a goal so that the kick gradually becomes higher. Weights may also be used and the speed of the movement varied.

9. Walking backward: Keep back straight, arms down to the side. Put a weight or other object on the floor, ask the child to push the weight back with each foot as he walks backward.

10. Lie on stomach on a table. Let legs hang over the table edge. Swing legs up so that body alignment is straight, then back down. Alternate legs and perform bilaterally (legs together).

(12) Goal: The child moves legs sideward and together in controlled movement.

1. Legs spread and together. Child is lying on back, arms at his sides, head at midline, legs straight and together. Place your hands against outside of his ankles, middle finger hooked over heel cords, or place heels in palms of hands -- no pressure on fingers. Push child's feet together sharply and resist as he spreads his legs apart. Say "push" as he pushes legs against your resistance. When child has completed his movement say "hold" and make the child maintain his position for about three seconds as you slowly increase pressure then discontinue resistance so he can complete movement. Now shift your hand position. Move flat of hands to inside of ankles or release pressure of heel of hand and use flat of fingers against inside of heel. Take up slack by slowly spreading legs further apart, then give quick, short push further stretching legs apart as he rebounds say "pull". Resist slightly as he pulls legs together. When movement is almost completed say "hold" and make child maintain position for 3 seconds as you slowly increase pressure, then discontinue resistance and let him complete leg movements.

2. One leg at a time. Same as above. Perform with leg individually -- first right then left. Place right hand on inside of right ankle and left hand on inside of left ankle for pulling to inside. For pushing to outside right hand on outside of left ankle and left hand on outside of right ankle. Always support the non-active leg at the knee. Your position should be at the child's feet.

3. Have child lie on his back with legs extended. Stabilize pelvis. Have him slide one leg out to the side and back, then the other leg and finally both. A guide may be placed at various distances away from the leg so that the child must slide his leg out to touch the guide. Place a weight at the child's ankle and ask the child to slide the weight out to a designated goal. These tasks may also be done while the child lies on his stomach with toes out to the sides, so that the inner foot lies flat on the mat.

4. Side lying: have the child lie on one side with lower knee slightly flexed for balance. Ask the child to raise the upper leg as you apply resistance above the knee joint. Roll over and try this on the other side.

5. Standing: ask the child to slide one leg out to the side with the toe of that foot on the ground. Then do the same thing with the toes turned out to the side. Reverse sides. Set markers for the child to reach with the free leg as the other leg remains fixed, or push a weight out to a goal. Make the weight ankle or knee high. Keep the knees and trunk straight.

(13) Goal: The child rocks forward and backward and may push himself backward when he assumes the creeping position from lying on his belly.

1. Rocking: Once the child has learned to maintain his balance in a tucked position, gently push forward and upward on his buttocks to move his weight forward over his arms and bring him into the hand-knee creeping position. Make a game of rocking him back and forth until his arms collapse.

2. Resisted rocking: With the child in the hand-knee creeping position, gently apply pressure by pushing with your hand against the child's buttocks as he rocks backward and against his shoulders as he rocks forward. The resistance should not halt the child's movement.

(14) Goal: The child is able to move from a lying position to a hand-knee position independently.

1. From lying on his back, roll him on to his side with knees bent. Encourage him and assist him to push up on his hands and over onto his knees.

2. From lying on his belly: When he is pushed up strongly on both arms, lift one side of his pelvis sharply to reflexively bend his hip and knee under him. Hold him in this position and encourage him to pull his other knee under him.

NOTE: Observe the child's rolling activities. Choose the method by which you think he will be most likely to succeed. Carry him through the activity with as much help as he needs at first. Then as he attempts to achieve the position on his own, assist him only as much as needed for success. Make him work at it. If he almost makes it once or twice but loses his balance and falls back or cannot quite push hard enough, help him keep his balance or maintain the halfway position until with another effort he can complete the movement on his own.

(15) Goal: The child is able to creep on hands and knees efficiently and rapidly.

1. Using an assistive strap or towel - An assistive strap of canvas about 12 inches wide and 36 inches long. You may substitute a

long towel folded in half lengthwise. With the child on his hands and knees pass the assistive strap under his middle and hold one end in each hand. Call the child's attention to a toy placed about 5 feet in front of him. If he attempts to drop to his belly in order to crawl toward the toy, use the strap to keep his trunk off the floor and encourage him to creep toward the toy on his hands and knees. Give just enough assistance with the strap to prevent his collapse to the floor. As the child gains better balance and control of his creeping movements, encourage him to creep over longer distances.

2. With minimal assistance from his own clothing: Stimulate the child to attempt creeping on his own. Offer assistance to his balance by holding lightly on to the waistband of his pants. If a girl happens to be wearing a dress, gather the skirt snugly about her waist and use it to assist her.

3. Once the child has achieved independent creeping, arrange his activities to give him frequent practice in it. Require him to move from one place or activity in the room to another under his own power. Praise his efforts and make this independence enjoyable to him.

NOTE: When a child achieves his objectives -- toy or place -- do not let him push back onto his knees and sit between his feet in the "W" position. Habitual sitting in this position leads to deformities of the legs and feet. Help the child, if necessary, to move into a sitting position with his feet in front of him.

(16) Goal: The child cruises along furniture and attempts to stand alone momentarily.

1. Cruising: As the child pulls himself up to a chair next to a table, encourage him to transfer his hold from chair to table. Present a toy on the table just out of arm's reach. Coax him to take a sideward step along the table in order to reach the toy. As he becomes more skillful at taking such sideward steps while holding the table encourage him to cruise around the table.

2. Provide opportunities for him to pull up to and cruise around some of the larger equipment in the play room: along the window sills, the chalkboard ledge or the utility cabinets in the classroom.

3. When he cruises fairly well and shows a desire to transfer to a nearby different support, be alert to his hesitation and encourage his daring by giving minimal support so that he can succeed.

(17) Goal: The child steps over obstacles without an exaggerated step.

1. Lay a four-inch walking board on the floor. Have the child walk back and forth across the floor stepping over the board each time; or have him walk in a circle stepping over each end in turn.

2. Lay two four-inch walking boards or one eight inch walking board for the child to step over as he walks back and forth across the floor or around in a circle.

   a. Lay them parallel two-feet, then three-feet, then four-feet apart.

   b. Lay them in a "V" about three-feet apart at one end and one-foot apart at the other.

3. Lay one of the short straight metal ladders flat on the floor -- or use the foot placement ladder.

   a. Have the child walk back and forth across the ladder, stepping over the side rail into the space between two rungs, then over the other side rail.

   b. Walk with one foot in the spaces between rungs, the other foot outside. Walk down and back along the same side.

   c. Walk the length of the ladder stepping over each rung and bringing both feet together in each space.

   d. Walk the length of the ladder stepping over rungs with alternate feet.

   e. Walk along the ladder, stepping into each space.

      1. Marking time, always leading with preferred foot.
      2. Same as #1 but leading with non-preferred foot.
      3. Alternating feet, walk the ladder stepping on rungs with one foot, into spaces with the other. Repeat reversing feet.
      4. Move sideward from one end of the ladder to the other, hands on one side rail, feet on the other, move in one direction, then the other.
      5. "Climb" the ladder, walking the rungs with hands and feet.
      6. Ladder horizontal, but elevated four inches from the floor. Repeat tasks listed above.

(18) Goal: The child is able to move about his environment without continually bumping into objects.

1. Encourage crawling, creeping, rolling, walking, running, over, under various pieces of equipment. Let him discover for himself what he needs to do to get through.

   a. Have him crawl or wiggle on his belly under a chair, through a cardboard carton 2 x 2 feet in size with top and bottom removed and laid on its side, between rungs of a straight ladder laid on its side, across a sandpile, and through a tunnel.

b. Have him creep on hands and knees under one of the low tables, around the table or around one or more of its legs and back again, through a tunnel, through a larger cardboard carton with the top and bottom removed, down a "road" between two paralled rows of chairs or two ladders held on their sides.

NOTE: Begin by having him go through, over, under one object and progress to many objects. When numerous objects are used it is called an obstacle course. This can be carried indefinitely by using:

-different equipment
-different positions for the equipment
-different modes of locomotion (walking, running, hopping, etc.)
-different modes of instructions

This activity (#1) is particularly good for the child who is afraid to lie on his back, or is always looking for a wall of a corner to back up against. This type of activity (#1) should be done with other concepts such as around, above, over, on top of, below, through, beneath. See the section of this program concerning the Obstacle Course.

MANIPULATION ACTIVITIES FOR EARLY DEVELOPMENT

These goals are listed closely by developmental order. There may be some gaps and goals which appear irrelevant. All goals relate to the build up of skills necessary to the performance of the manipulation skills to follow. These skills can be found in the section of this program dealing with manipulation skills. The use of the activities presented here is for the specific needs of the student for correcting a weakness or gap in development.

CONTENTS MANIPULATION

ACTIVITIES

(1) Goal: The child is able to assist by pulling with arms when pulled from back to lying position to sitting.

1. Pull toward sitting. Place child on his back. Grasp both hands and slowly pull him up toward a sitting position. Encourage him to help by lifting his head and pulling with his arms. Then shift your hands to the sides of his shoulders and lower him to the mat again, encouraging him to hold his head up as long as he can.
   Variation: Place the child on his back. Tuck a small ball into the waistband of his pants. Encourage him to remove it. He will have to lift his head to look at the "nuisance".

2. Tilting balance. Continue tilting balance activities as described in head and trunk control with child sitting on your lap, on the floor, or at the edge of a table with his legs hanging over. (These can be found in activities for locomotion) Tilt him further and begin to give him gentle resistance as he tries to regain the upright position of sitting.

3. Airplane. This is a variation of the tilting exercises described earlier. Seat the child at the edge of the table, knee's bent and feet hanging down. Stand with knees in front of him, close enough so that your body will keep his knee's from straightening. Hold his hands and raise his arms out to the side. Say, "This is the way the airplane goes, "bzzzzz," as you tilt him to one side and then the other. Each time encourage him to help himself back to sitting. Then tilt him to one side, bring him around and up from the back. Repeat from the other side. Begin this activity slowly and make sure the child feels secure enough to enjoy it.

(2) Goal: The child flexes and extends arms without assistance.

1. Arm Pull: Lie child on his back, arms at his side. Grasp child's hand, give quick pull down on hand until child begins to pull arm up. Hold gently, then release. Do this with both arms together, then each arm independently.

2. Bilateral and unilateral tasks: With weights in each hand, touching shoulders, elbows flexed, lift above head until fully extended, then back down to shoulder, up, etc. Extend arms horizontally at sides and back to shoulders, then with hands on shoulders, extend hands out to front of body and back, etc. Lie on back, arms extended at right angles to body, palms up, bend elbow and back down. These tasks may be done on table or on floor.

3. Sit at a table shoulder level and put a weighted object directly in front of the child. Have the child push the weight straight out away from him, then pull it back. Vary the weight and the distances so that the movements can be controlled and not bursts of pressure.

4. With elbow on table or floor and palm down, twist the forearm so that the palm faces up from the table, then down on the table, etc., thus moving wrist and hand with forearm, but do not move shoulder and upper arm.

(3) Goal: The child moves shoulders intentionally and independently.

Activities may be found on pages 210-212 of Wabash Manual.

(4) Goal: The child is able to move both arms together in a generalized movement.

1. With child lying on his back,

   a. Grasp his wrists. Gently draw his arms upward over his head, then down again to his sides. Move both arms together several times, then move alternately.

   b. Bend and straighten each elbow several times both alternately and together.

   c. Draw his arms down and cross them over his abdomen, then carry them up and out to make a "V" over his head. Repeat several times.

2. Stimulate the child to move actively.

   a. Tap his closed hands to try to get them to open. Also try rubbing the backs of his closed hands gently with your fingers. Rubbing and/or tapping may be used on any large muscle or muscle group to stimulate movement.

(5) Goal: The child brings his hands together at the midline and at the same time attempts a voluntary grasp.

1. Place the child on his side with hips and knees flexed. Pull his lower arm and shoulder forward. Also press the upper shoulder forward so that both arms are in front of him. Carry out the following activities just on one side and then the other.

   a. Rub each palm briskly with your finger tip, opening his hand if necessary.

   b. Place his two hands together, put them together, rub them together, curl one hand around the other. Talk to him, sing to him, or say jingles to keep his attention and to prevent any resistance.

   c. Place squares of cloth of different textures -- rough, smooth, soft between his palms and rub his hands against them. Pull one through between his index and middle finger and leave it stuck there to see if he will attempt to get rid of it.

Variation:
(a) Offer the child three wood blocks which have been covered on both sides with assorted textures.
(b) Offer him assorted small sponges.
(c) Place a small ball, block or other bright colored toy between his hands. Move them around on it. Encourage him to hold it with one or both hands.
(d) Dangle a noise-making toy or other attractive toy near his hands. Get his attention and encourage him to grasp it.
(e) Place a brightly colored toy near his upper hand. Encourage him to reach for and grasp it.

NOTE: The child should not be allowed to place his hands in his mouth during these exercises. This will inhibit the progress of these activities. Some form of stimulation can be offered for the child's lips and mouth.

(6) Goal: The child moves wrist and hand easily.
Refer to page 212 of Guide to Early Developmental Training.

(7) Goal: The child reaches and grasps.

1. Provide a number of toys in a large variety of sizes, shapes, textures, and weights.

2. Support the child in sitting position in a high chair, or a special chair with a tray, or pushed up close to a table of suitable height. Present a variety of objects to be handled and explored; some should lay on the table, others should hang in front of the child or the teacher may dangle the toys in front of the child; a long flexible object can be inserted into a ball of clay on the table in order to provide a stationary yet moveable object which will not fall off. Do not present too many different toys or objects at one time, but, rather, change them frequently. He should get as much experience with things of different sizes and shapes as you can find to give him. Encourage him to bang them on the table or against each other.

3. Play games such as "Peek-a-Boo" and "Pat-a-Cake."

4. As he becomes more able to control his trunk, let him manipulate toys while in various positions:

(a) Sitting on the floor with legs outstretched.
(b) Sitting on floor with legs crossed.
(c) Sitting in a highchair.
(d) Sitting in a kindergarten chair with a low table.

5. If the child is disinterested in reaching and grasping or if he is blind, support the child in a sitting position or lie him on his back being sure he is comfortable and secure. Grasp his wrist and put an object in his hand or hands. Be sure the object has a noticeable texture or "feel". Tell the child to "feel" the toy.

Take the toy from his hand or hands, hold it 3" to 12" from one hand and tell him to "take the ball". Grasp his wrist and extend arm and hand out to the object. Put it in his hands and praise him for accomplishing the task. Continue to do this using different toys and objects and putting them in different positions and at varying distances until he has mastered the task. If the child is blind be sure to use an object that will make noise.

6. Continue the above activity gradually decreasing the size of the object to be reached.

(8) Goal: The child reaches and grasps with one hand at a time.

1. With child lying on the floor on his back or first on one side then the other. Present toys that are easily held and seen; first place them close to the other. As he develops a better reach, gradually present them at greater distances.

2. While supporting the child in a sitting position, on your lap or in a high chair, present toys which are easy to grasp: Sponge figures or rice bags in the form of animals, for instance. Present them one at a time. Encourage him to grasp a dangling toy, to take a toy from your hand, or to pick up a toy from the high chair tray or table top. Occasionally present two or three toys at a time.

3. To develop reaching and grasping objects placed so that he must cross the midline, do the above exercises but place objects so that he must reach across his body.

4. To help the child learn to grasp objects placed at arms length or slightly past arms length place toys or objects at a distance so he must stretch to reach. Be sure he then moves the toy closer to him in order to efficiently examine it.

(9) Goal: The child is able to release objects voluntarily and without exaggerated movements.

1. Develop an efficient release by doing basic activities in manipulation previously presented and those to follow dealing with eye-hand coordination.

2. If the child cannot release when he wants to, or does not release when he should, do "take and put"exercises in following goal activity. When the hand reaches the container grasp the child's wrist, hold the hand with object grasped in it over the container. Apply gentle pressure to wrist until the object falls. Continue this in a variety of other situations until the child learns to open his hand to release a grasped object.

NOTE: If the child's grasp is weak strengthen the hand by letting him grasp and release play dough, foam balls or toys that can be put in the palm of the hand and squeezed.

(10) Goal: The child integrates hand and eye coordination.

1. "Take and Put"

Seat the child with body supported and stabilized and sit in front of him. Using a weighted flexible object like a bean bag or other attractive object, hold it in front of the child.

a. As you say, "Take," help the child deposit the bean bag in a container or in a designated place by directing his arm if necessary and applying pressure to wrist if he cannot "release".

NOTE: This exercise assumes a reach, grasp, and release ability but it can be achieved at the lower level of "rake and drop". Stop the moving object each time his eye is not directly on it. Do not let him take it until he has eyes on the object.

2. The child is on his stomach, on the floor or on a mat, head turned first just to one side then to the other. Use a small rolling toy or other attractive object preferably one that makes noise.

a. Place the child's hand on the object. Try to avoid concealing the object. Perhaps push it from behind. Direct his hand in moving the object:

(1) In short vertical movements which are no longer than chin to forehead at first.

(2) Then in horizontal movements covering a distance from the child's arms reach to his elbow.

(3) Finally, move the object in a small arc.

b. Place the toy on a strip of pile carpeting to increase the resistance and force the child's attention to it. If he does not grasp it, place his hand on it.

c. Use a more advanced position. Place the child on his side with a sandbag or other support behind his back as a prop. He uses hand opposite to brace. Repeat same actions as above.

3. Facilitated pursuits. Have the child lie on his back, limb's immobile. Put fingernail polish or a piece of colored fingernail polish on child's thumb nail. As you hold bean bag 24" above his eyes, he is to grasp end of bean bag with thumb facing his eyes. Now move end of bean bag slowly in an arc telling him to "look at his thumb." (Raise the bean bag so that his arm is not bent at the elbow.) Move bag horizontally, vertically, diagonally, in a circle. The arc may extend for only the width of his shoulders, or if he can follow, extend a foot or so on either side of his shoulders. Tell him to hold his head still. Only the eyes are to move. You can hold his head.

4. "Point to _____!" Explain that when you say, "Point to (something in the room)," the child is to look at that thing and point to it until you give the next command. Begin with, "Point to me!" This is a good way to get him started. Continue to have the child point to various objects in the room, or vary this by pointing to some other individuals.

(11) Goal: The child moves upper trunk independent of lower trunk.

(12) Goal: The child moves lower trunk independent of upper trunk.

Refer to pages 217-218 in Wabash manual for activities to accomplish these goals.

(13) Goal: The child is able to move body parts in a controlled and coordinated pattern.

Integration of senses occurs when the teacher or therapist directs all sensory channels to one purpose at the same time. The method used is to involve one sense, the Haptic (tactual and kinesthetic), by starting the physical activity and then involving each remaining sense one at a time until the total sensory system is involved with the body movement. The exercises below are examples of how to do this. It can be done with any number of exercises particularly those listed that are concerned with differentiation, eye-hand coordination and locomotion.

1. Leg Thrusts - The child is lying on his back. Bend his knees against his stomach. Hold them gently in place until he starts to push back. Say, "Push, push" as you let him straighten and lower his legs. You apply gentle pressure against his downward thrust. Be sure his hands are at his side and still and that he is looking at you. The senses will be integrated if:

   a. Eyes are focusing on one target, preferably your nose, throughout the exercise. You decide on the target and see that he looks at it. Stop exercise until he does.

   b. He listens to your voice as you use language that is appropriate for the child and is connected to the activity. It could be "push, pull, look, you are moving your leg," Jack is moving his leg," or a noise that will distract him from other auditory stimuli within the room.

   c. The only "feel" or tactual imput is that of your pressure against his thrust and of your hands holding his legs. To do this see that his arms and hands are still; his eyes and head are not moving; his fingers are not scratching on the floor; he is not chewing on his tongue; all other body movement has stopped; he has nothing in his mouth.

2. Resisted Walking

   a. Pushing - Face the child, get ready to walk on your knees

so you are at his eye level. Put child's hands on your shoulders, your hands on his shoulders. Remember not to "dig in" with your fingertips. Now tell the child to "push" you across the mat. Work for even, regular steps and smooth, strong progression. Now do it having him look at your nose constantly. The older child can do the same exercises walking on his knees.

b. Pulling - Stand behind the child. Hold him at the hips with your flat fingers over the front of his pelvis. Bend your knees and lean back so your elbows are straight. Tell him to "pull". Walk across the room or for 8-10 feet. "Pull". Now do it having him look at a target. The older child can do this while walking on his knees.

3. Resisted Creeping

a. Pulling - Establish pattern by telling the child to creep to a particular object or spot. Bring him back or call him back to the original position. Grasp his ankle and tell him to creep again. Be sure this is a game. He must pull against your resistance as you creep behind him. Increase resistance as much as possible but be sure he can continue a smooth even creeping pattern. Then try it giving him a target to look at. This can become a game by having him creep to get a toy, a piece of candy placed ahead of him 8-10 feet, other treats he likes as a goal. Tell him to pull as he creeps.

b. Pushing - Child in creeping position, you at his eye level facing him. Put your hands on his shoulders. Have him creep toward you - you resist as much as possible but allow him to move smoothly. Tell him to "Push me across the mat". Try again having him look at your nose throughout the entire exercise.

STABILITY ACTIVITIES FOR EARLY DEVELOPMENT

These goals are closely related and necessary for development of the locomotor skills. They are important in and of themselves because of the need for stability and balance to perform the skills of not only locomotion but also manipulation, and the other activities and skills within and outside of physical education and motor development.

ACTIVITIES

(1) Goal: The child moves neck muscles purposefully to develop head control.

1. Have child slowly roll his head in a circle touching chin to chest, ear to shoulder, back of head to back, etc. Add weighted headband or helmet for resistance. Do this with the child sitting, standing balancing on balance saucer. Have him change his hand and leg positions.

2. Have child raise head, put your hand on his forehead and tell him to push your hand to the ground. Gently push against his head to give some resistance.

3. With child's chin resisting on his chest, place your hand on the back of his head. Tell him to push your hand up and away. Apply gentle pressure as in #2.

NOTE: Make these exercises games. With the use of resistance to movement the additional outcome of strength building is present. Do not allow this to overshadow the intended purpose. Always strive to meet the prescribed goals.

(2) Goal: The child is able to go from lying to sitting position without assistance.

1. From lying on his side: Position yourself behind the child's hips. Bend his knee up toward his chest. With one hand grasp his upper hand and gently pull him up sideward toward sitting. He will help by turning and lifting his head, pulling himself toward you and getting his other forearm and hand under him. Use your other hand wherever needed to keep him from falling back, to hold his underneath hand on the floor, or to help in some other way. Help him only as much as necessary for him to accomplish the task. Try this first from one side then from the other. He will perform better from one side. This is his preferred side and he will achieve sitting independently from this side first. Work equally from both sides although you may need to do more work with the non-preferred side.

2. From lying face down: Draw one arm across and beneath his head and chest. He will roll onto his side and usually bend his hips and knees. If he does not bend them as desired, bend them for him. Then proceed as from side lying. Once he gets the idea he will turn onto his side by himself, ready to be helped to sitting.

3. From lying on his back: Turn his head to one side and draw his opposite arm across his chest. He will roll onto his side. If he does not bend his hips and knees, bend them for him. Then proceed as before.

4. From hands and knees: Push him gently over onto one hip but do not allow the arm to collapse. Support him in this position and encourage him to work himself over into a straight sitting position.

(3) Goal: The child sits with support and is able to attend to another task. Refer to pages 47-50 in Wabash Manual for activities to accomplish this goal.

(4) Goal: The child is able to sit erect without support and with good balance.

1. Seat child on the floor. Encourage him to reach forward, to one side or the other, up over his head, and turning his body by presenting toys to him in a variety of ways and from many different directions.

2. Encourage him to sit for play and provide him with objects of many sizes and shapes which he can manipulate. Place some objects so that he must reach for them.

3. Seat him on a large block with his knees bent and his feet firmly on the floor. In this position play games such as Pat-a-Cake and Peek-a-Boo. Hold a light but fairly large ball on his head and make him reach up to take it off. Place a bean bag on one of his feet or drape a scarf over his legs and encourage him to take it off.

4. Seat him in a chair of suitable size to play at a table. Place a block under his feet if they do not touch the floor. This will give him more stability.

5. Seat him on rocking toys such as a saucer, innertube, rocking horse, cage ball. Encourage him to attend to other tasks such as reaching for a toy, holding a toy, imitating a sound.

(5) Goal: The child is able to support his weight in standing, to actively bend and straighten his knees when held in standing position, and to balance trunk efficiently.

1. To stimulate supporting reflex activity in his feet and legs, hold the child erect so that his feet touch the floor, or your lap, supporting him with your hands at his upper ribs beneath his arms. Lower and raise him, always keeping his feet in contact with the floor, and encourage him to support some of his weight on his legs.

2. Bouncing while held erect. Hold child in standing position with his feet on your lap or on the floor. Allow his knees to bend, then lift him erect again. Encourage him to help straighten his knees as you lift him to standing and to bear increasing amounts of his weight.

3. Assisted from sitting to standing. Place the child on his back on the floor. Sit at his feet with your thigh at right angles to his feet. Grasp his knees and pull him toward you until his hips and knees are bent sharply but his feet are still flat on the floor. Tuck his toes under the edge of your thigh to stabilize his feet. Take his hands and pull him toward sitting; he should help by lifting his head and pulling with his arms. When his trunk is erect continue to pull him forward until his weight is over his feet. Then encourage and assist him to push up to standing, you will probably have to shift your hands from his hands to the sides of his chest beneath his arms. When his knees buckle, lower him again to sitting, then to lying.

(6) Goal: The child is able to stand independently and attend to other tasks.

1. Stand the child with his back in a corner of a room: This gives him support at his back and to both sides. Encourage him to remain standing and maintain balance while attending to other tasks.

2. Stand child with his back against a wall. This decreased the degree of support offered. Now he is protected only from falling backward. Play with him using a wide variety of activities. When you believe that his balance is fairly stable, stand him a few inches away from the wall and continue his balance training. Should he lose his balance and fall backward he will break his fall and he will just slide down to sitting.

3. Standing in the middle of the floor. Stand him up or kneel on the floor and let him pull to a stand against you. Then help him to get his balance. Once he is balanced guard him with your arms, collapse and laugh with him. Then try again.

4. Standing at a low table. Provide activities and toys he can enjoy as he supports himself against a table. If possible push the table near a corner so that he will have more security. If this is not possible push something up behind him yourself. Don't touch him, just be there to break his fall if he collapses.

NOTE: Development of complete control or balance of body comes when the child is able to attend to his environment and everything that is going on around him while he is performing any of the numerous locomotion skills rather than his stability or manipulation skills.

(7) Goal: The child is able to fall safely: to hands and knees and to sitting position.

1. Falling forward. Use a soft inflated beach ball at least eighteen inches in diameter. Place the ball on a mat. Lay the Child on his belly on the ball. Roll him forward (Head first) to stimulate his protective arm reflex. He should automatically put his hands out to protect his head and face. If he does not, take his hands and place them in the desired position showing him that he can protect himself. Then continue to roll him forward and back, each time urging him to catch himself on his hands. Practice daily until his protective responses are consistent.

2. Falling backward. Practice going from squat to stand as in the goal concerned with this action, but instead of lowering him gently to sitting, release hands to let him drop the last inch or two. Exaggerate your release by throwing your arms wide. Say, "Boom!" as he lands. This makes a great game and he learns not only how to fall, but that falling is no tragedy.

(8) Goal: The child is able to seat himself in a chair without assistance.

1. Place the child at the side of a child's chair. Let him pull to a stand. A child's usual procedure from here is to hold on to the back with one hand, the seat with the other and get one knee onto the seat. Then he pulls himself to meet the seat, turning himself around to sit down. Guide the child through this process giving help only as needed.

PERCEPTUAL - COGNITIVE ACTIVITIES FOR EARLY DEVELOPMENT

The child develops in a wide variety of areas in the early years. Strong foundations are formed. The area of physical-motor activity has much to do with these early formations. These activities are presented to provide a means for helping with these formations. Of course, other areas outside the physical-motor area must be introduced along with these activities. The pathways to perceptive and cognitive include physical-motor pathways but include much more which cannot be excluded in favor of another. All must be approached and utilized to its utmost.

Only two of these goals will be included here. The others may be found in the Guide To Early Developmental Training. The Guide To Early Developmental Training may be obtained for the Wabash Center for the Mentally Retarded, Inc., Lafayette, Indiana. The page numbers for this manual in which the activities for each goal may be found are given along with the goal. It is suggested that the interested teacher get a copy of the Manual. It contains much information and useable activities for the training of mentally retarded and handicapped students. For the sensory impaired student many of these activities are quite appropriate and useful. The ranges of coverage in the developmental areas are all inclusive. For the most part the activities will need to be adapted to suit the specific needs of the sensory impaired student since they seem to be intended for use with developmentally handicapped children. The actions of the activities are the most important. In most cases if the teacher is able to put the student through the action and provide as many learning stimuli along with the action the goal can be just as realisticaly achieved. The teacher will probably provide more of the movement assistance and/or use stronger stimuli than that suggested in the Manual. The teacher's use of her knowledge and understanding of the students, and acceptable teaching methods, will determine how these activities may be used. I would encourage each teacher to use his imagination and creativity in adapting these activities so that the students may receive the ultimate advantages from these activities.

CONTENTS PERCEPTUAL-COGNITIVE

Page

(5) Goal: The child sequences events in task directions.

2 steps
3 steps

(6) Goal: The child is becoming aware that his body has different parts and where they are located on his body. Page 195.

(7) Goal: The child is able to locate body parts on other people. Page 225.

(8) Goal: The child is able to locate body parts on three dimensional objects. Page 225.

(9) Goal: The child is able to locate body parts in pictures. Page 225.

(10) Goal: The child imitates specific body movements accurately and quickly. 126

(11) Goal: The child moves body parts to specific verbal commands quickly and 127 accurately.

(12) Goal: The child looks for causes of actions. Page 294.

(13) Goal: The child locates the source of a sound with his eyes. Page 299.

(14) Goal: The child finds the "right" side of an object. Page 302.

(15) Goal: The child goes around an obstacle to get a toy. Page 306.

(16) Goal: The child indicates awareness of a person's absence. Page 307.

(17) Goal: The child responds vocally as you talk to him. Page 309.

(18) Goal: The child imitates a movement already familiar to him. Page 315.

(19) Goal: The child imitates a series of movements. Page 316.

(20) Goal: The child imitates an unfamiliar invisible movement. Page 318.

(21) Goal: The child remembers on activity and performs it later. Page 319.

ACTIVITIES

(10) Goal: The child imitates specific body movements accurately and quickly.

1. Do as I do: Children imitate your changing arm positions outlined below while standing on both feet or knees and then while standing on one foot or one knee. Allow child to use preferred foot at first then have him switch to non-preferred foot. Move both arms together, smoothly but definitely:

a. Overhead
b. Sideward at shoulder height
c. Forward at shoulder height
d. Place hands on shoulders, on hips, on head

Vary the sequence used. Say "Do as I do, before each change. Hold each position about five seconds.

2. Teach simple action songs or rhymes. Have child imitate your movements as they sing or recite.

3. Demonstrate and have child imitate your movements in games, animal walks exercises.

(11) Goal: The child moves body parts to specific verbal commands quickly and accurately.

1. Seat child in front of mirror. Put finger on your eyes. Say "eyes". Take child's hand, and repeat preceeding actions. Progress through facial features, legs, hands, feet, fingers, toes and trunk body parts.

2. Begin play with such requirements as "Give me your hand," (shake his hand); "Give me your foot" (shake his foot); point to the hand or foot as you ask him to give it to you.

3. Ups and Downs: lie on your back with your head nearest the wall. Jump up.
Vary your commands having child lie on back, stomach or side, orienting themselves as directed.

4. Do as I say. Direct the child as follows: "Touch your elbow to the knee". Put one knee on the floor. "Touch your head to the wall".

COMMUNICATION - LISTENING, SIGNS AND SOUND

To communicate with the student who is visually and/or auditorily handicapped all methods of teaching depend upon the teacher's ability to convey information and directions to the student. This applies to all levels of intellectual and/or developmental abilities. The mentally retarded student will be difficult to reach and will require a more simplistic approach to communication.

This section will deal with the student's needs in this important areas of communication, and his relation with the outside world. It is not necessary to say that the student who is unable to hear will also lack in communication. The blind or partially sighted student will not have adequate communication abilities either. This student may be having difficulty getting away from his "I being". The fewer lines to the outside the stronger the "I being" will be. The introduction of a means of relating with the world is being provided through movement and highlighted by communication in a simple one-to-one relation with another individual. The student's receptive communications is the stimulation which builds the inroad to the student's feelings of self and her meaning of being.

The theory here may seem a bit grand or too far out to consider. But step inside the student one time (many and frequent times) and look at it from his side. When the student performs a movement pattern it is simply a movement. Without the communication of the learning cues from the teacher the student receives nothing but the internal stimuli. This stimuli will only stay within the student. It will not necessarily be evidenced outside the student in any movement control. When there is contact-physical, tactual, verbal, auditory, visual - the student receives the additional stimuli of the movement which the teacher provides.

The stimuli are then internal and external. The student has received a line of communication from the outside. If also the student is able to sense a rewarding response from the teacher the movement may have some pleasures. This of course increases the likelihood that the student will repeat the movement again. From here on out there is all stimulus - response learning theory or what ever methods or theories are followed by the teacher. When this point, a line in, has been gained the basics of learning can begin to develop.

LISTENING

When that line into the student's "I being" has been laid the teacher must teach the student how to use it. Other lines may be added later and any of these may be used. The use of these imput lines by the student can be referred to as listening. This is easy and most appropriate to associate with the auditory sense. But listening can also be a visual listening and/or a partial listening. A student is listening when his attention is focused on a set of stimuli. When that stimuli is being taken in and ingested, as it were, by the brain, on a conscious level. When that ingested stimuli is sorted and the relevant learning cues are separated the student has truly listened.

There are then three levels of listening. The sensation of sound, the perception of that sound and, the sorting of the relevant sound stimuli. It may be difficult for the teacher to tell exactly on what level the student is listening. The performance of the desired motor patterns will for the discerning teacher, serve as an indication of where the student is listening. How far do the stimuli reach before they are consciously or unconsciously stopped. If consciously stopped, the student has selectively chosen to refuse the stimuli. If unconsciously stopped, the student has not yet reached the experience level at which he may perceive or adequately discriminate valuable stimuli. Although many factors may enter into this process to inhibit or enhance its outcome, basically it can be taught and learned by most students. If a sensory handicap or handicaps limit or completely deny this learning to occur some means to work around it needs to be found and instituted.

The previously discussed philosophy belongs to the writer alone. It is based upon experience and a shell of knowledge and information in the area of listening. The use of this philosophy lies in its teaching and understanding facility. I am sure that many speech therapists and clinicians can effectively debate this idea, and win. The teacher, not of these professions, may find this explanation enlightening and workable for understanding the student's needs and probable abilities. If further practice, research and contemplation seem to conflict with this philosophy it will be recinded. If the reader wishes to comment upon findings of its use or simply on the philosophy itself, please do so. If there is total agreement, I'll believe I may have done something worthwhile.

LISTENING ACTIVITIES

There are no special activities which may be listed here which will elicit a listening skill. Primarily listening is a practiced skill. It is learned and developed through practice of listening during relevant movement activities. As soon as the teacher is able to contact the student, listening practice must start. The progress of development begins in the simple stage of stimulating the child through the open line then broadening the stimuli to increase their number. Each line is then expanded and developed so that the student is able to accept many forms of each set of stimuli.

To increase the student's acceptance of relevant stimuli the teacher must put an accent on those cues which are important and lead to future learning. The teacher points out and emphasizes such things as points of reference for walking - the feet in particular, textures of walls, floors, other walking surfaces, the tactual sense of heat and cold, the movements of the students arms - a general or a specific nature, directions in space - as related to other persons and to the student's body. The redundant nature of these activities is the factor which directly affects their eventual learning. They must be repeated and repeated under relevant circumstances. The student does not memorize necessary cues, but through experience the student comes to recognize those cues which hold importance under various conditions.

The sections concerning co-active movements, early locomotor skills, early developmental training and general movement point out the fact, in another way, that the student needs to sense movement and develop an awareness of the stimuli which relate to this motion. The student must be listening in order to develop this awareness. The teacher provides a touch or a co-active motion

or support in the proper area in order to help the student move or position herself properly. By this means stimuli are taken in which relate to the performance of the ability or skill. To sit, the student needs to feel balance in his head and support himself mostly by using the muscles surrounding the spine (erector spinae). The arms and legs come into play, the arms in particular for protective reaction and a little support. When performing an activity which has to do with sitting the teacher points out, by touch and support, the use of the back muscles. By moving the student's head slightly to the left and right, forward and back, he develops a sense of balance while sitting. The student has received the important cues from the teacher, in the balance mechanisms of the head and the supportive muscles of the back. These are stimuli which hold more importance, at the time, for the student than any others which may enter the communication paths.

We can say that the student is listening to the important cues when he is able to adequately perform the skill, sitting independently. This means he is sorting stimuli and allowing only those which hold importance for the skill to enter. At a later time the student will be asked to sit unsupported and attend to other stimuli in the environment. At this time the important listening - for sitting - has been learned and is, more or less, on an unconscious level and a new, more complex level of this basic listening must be developed. This level is beyond the three levels already described but may develop in much the same manner. Its progress will not be discussed at this time.

SIGNS FOR MOVEMENTS AND DIRECTIONS

These signs given in this section are adapted or taken from A Modified Language Aquisition Program, Martha S. Roland, which is adapted from "A Language Aquisition program for the Retarded", in McLean, J.E., Yoder, D.E., and Schiefelbusch, R.L., (Eds), Language Intervention With the Retarded: Developing Stratigies. Baltimore, Md., University Press, (1972). The signs are an adapted form of the Ameslan (American Sign Language) manual sign language system. References for these are given in the bibliography for this program.

The earliest form of communication is definitely not verbal. It is mostly a physical expression of feelings. For the student who is severely mentally retarded or developmentally delayed because of sensory impairment handicaps, language must remain on this purely physical level. For our purposes it must be receptive only. The expressive forms of manual signs are beyond the scope of this program. It is also likely that the teacher will want to use another system of sign language. It is not our intent to develop a system of total communication for the student but to provide a means of receptive communication which allows the student to accept more stimuli related to the performance of movement patterns, abilities and skills.

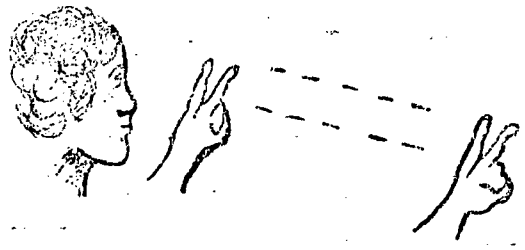
The signs are of a general nature and for use only in giving directions to the student concerning the performance of a movement. The teacher is to perform the sign and speak the phrase simultaneously. There should be no attempt to get the student to repeat the sign only to follow the directtions as presented

manually and vocally by the teacher. These signs are suggestions only. If the teacher is working on another sign system with the student or wishes to develop an expressive as well as receptive sign system, this may also be done. These signs may also be used as a base for the eventual development of a sign language for the student whether this system or another is to be used. In either case the teacher must be the one to decide based upon the needs and abilities of the student. The type of student who will gain the most from this form of manual communication is the deaf-blind and/or the deaf-mentally retarded student, who may not develop an adequate expressive language but can learn a broad receptive language.

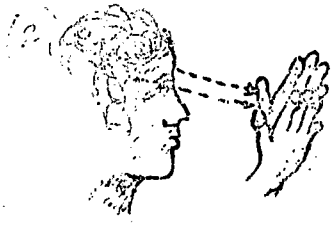
SIGNS

These signs are to be used as manual words which are the same as the words or phrases they stand for. The teacher and student can work out signs on their own as long as these do not complicate the student's receptive skills. They must also be documented by the teacher so that all persons may know with what signs the student is familiar. Use signs consistently and accurately along with movements and directions. All signs must be made so that they are in the student's field of vision.

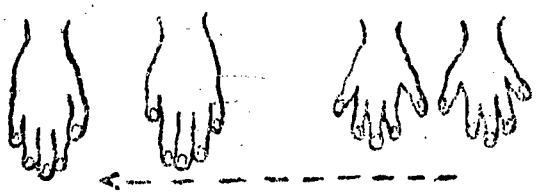
(1) Look, Watch, Look at - The fingers are held in a "V", first and second digits, in front of the student's face. The finger tips are then moved to point to the object of attention.



(2) Watch, Attend, Attention - Place both hands on either side of the student's face, then move hands to the point of attention, directing the student's gaze to that point. This a stronger form of #1.

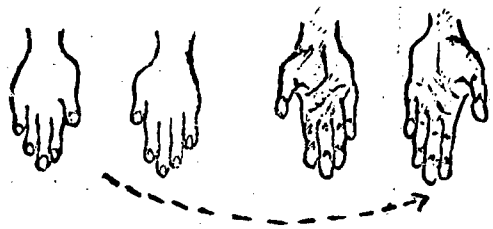


(3) Put, Place, Move - The hands are pointed down with the tips of the fingers spread. They are then moved from right to left or from one point to the next and the fingertips are closed as the hands are moved.



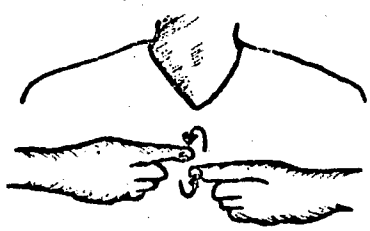
(4) Sit - The palms of the hands are down. The curved index and middle fingers of the right hand are crossed over the index and middle fingers of the left hand. Point or make a gesture toward the place where the student is to sit.

(5) Give - The hands are held, fingertips together as in ending movement of "Put" (# 3). The hands are then rotated so that the palms are facing up. This may be signed with one or both hands.

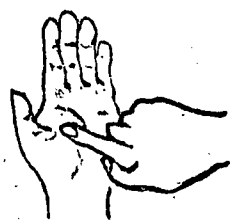


(6) Bounce - The hand is held open with the palm down. Move up and down rapidly as if bouncing a ball.

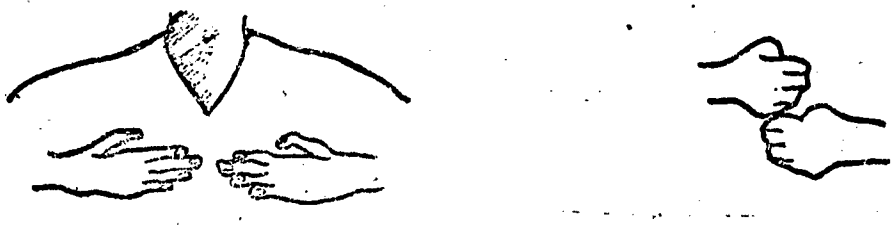
(7) Go - Palms face down, index fingers are extended. The hands rotate move forward and rotate around each other.



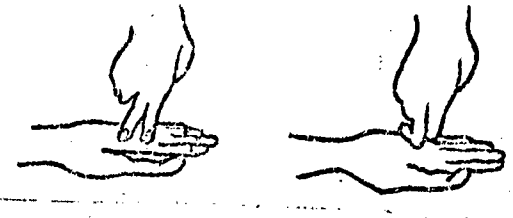
(8) Show, Demonstrate - The left hand is held with the palm facing the right hand. The tip of the right index finger is placed into the left palm. Both hands move forward.



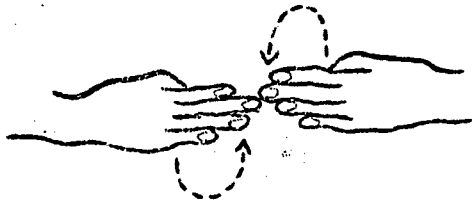
(9) Get Both hands are held open palms facing in. They are brought to the body and fists clinch, the right on top of the left.



(10) Jump - The index and middle fingers of the right hand are placed in a "V" standing position on the left palm, which is facing up. Lift the right hand bending the knuckles and return to the standing position. Repeat.



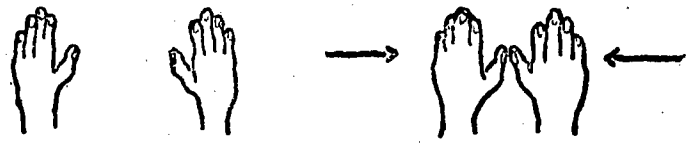
(11) Roll - The hands are held palms facing the teacher. Move the hands around each other and away from the body.



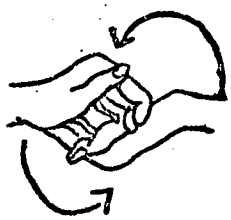
(12) In - Place the closed fingertips of the right hand into the cupped left hand.

(13) On - The palm of the right hand is placed on the back of the left hand.

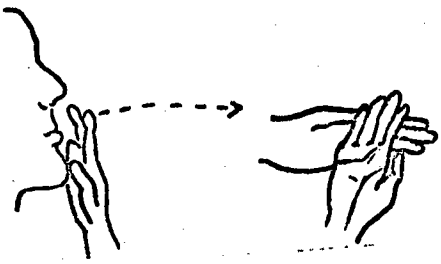
(14) Floor - The hands are held apart, palms down, flat over the floor. Bring them together, touching thumbs.



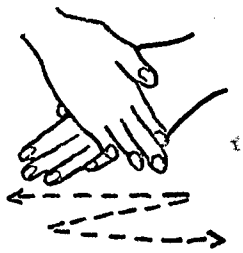
(15) Ball - Hands are cupped together, one palm down, the other palm up. The positions are quickly inverted.



(16) Good - Touch your lips with the fingers of your right hand. Move the right hand, palm up, to touch the back of the right hand on the palm of the left hand.

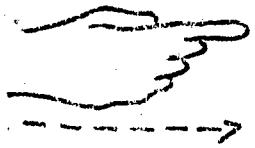


(17) No The hands are held with the palms down. Cross and uncross the hands.

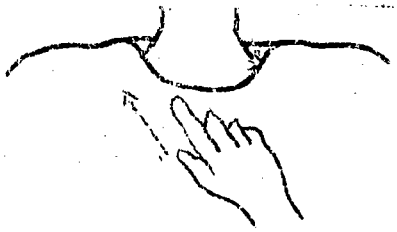


(18) Yes - The right hand is fisted, palm down. Bend the wrist down and forward. Repeat.

(19) You Point your index finger out toward the student.



(20) Me - Point your index finger toward yourself.



To cover all possible manual signs which may be used is not the objective of this section. These signs are a means of communication, one way, with the student. They are more or less descriptive of most of the simple movements and directions which the student will need to learn to accept and understand. They serve as another stimulus to help with the student's learning. The signs may be used according to the teacher's teaching design and individual program for the student. Each person will use what is necessary for his or her own preference. Be sure that the use of these stimuli do not overload and confuse the student. Always use the manual sign along with the verbal phrase. Remember that these signs are not intended to be means of communication by the student. You will know that the student is understanding the sign and the command if he is able to repeat signs accurately. Again, this is not the object of their use. The eventual use of the signs given here, as far as the teacher's goals for the students total communication skills is concerned, is up to the teacher and not intended to be a concern of this program. Use them for your own teaching effectiveness as a base level mode of communication with the student.

The Factor of Sound

It has been an acknowledged fact that for the blind or visually impaired person the auditory sense is probably the most important for providing information concerning the surrounding environment. The blind person's hearing is not necessarily more acute because he is blind. It is the fact that because the individual is blind he must use his hearing more and therefore it became more finely developed, along with the other senses which must be used more than they normally would be.

We must teach the blind and visually impaired student to use this sense of hearing to her utmost potential. There are some important skills involved with the auditory sense which will be important to the student especially in mobility. These skills must be introduced as early as possible. The student may not learn to reach her full potential of use. But the early experiences

with this form of training can highlight an area of effective sensory control which will be of help to the student in nearly everything he may eventually do in life.

From research done with the blind over many years it has been found that the sense of hearing is used much like radar. Sound waves that bounce from an object and return to the student can be used to localize that object. The degree of accuracy can be well developed with proper training. The blind are able to tell size, shape and distance to the object with a good degree of accuracy. It has been found that the width of the object is more easily detected than height. The sound is best detected when the source of the sound is the individual and not a secondary source behind or to either side of the individual. This implies that the refractive angle of the sound waves has a great deal to do with the blind person's interpretation of the object. If the sound originates from behind the object, as related to the student, the individual will be able to detect what is known as a "sound shadow". The "sound shadow" is the auditory equivalent of the light shadow. A source emits sound from behind an object. The individual hears the sound waves which come around the object and not those which are stopped by the object. The individual receives an auditory picture or outline of the object.

These are factors which affect the capability of the individual to use this auditory sense. Excess sound in the environment which causes extraneous auditory stimuli confuses the individuals ability to use his hearing as a source of information detection. Another factor with which the teacher must be concerned is that the student who is deaf-blind will not be able to accurately use audition as an effective information gathering sense. The deaf-blind have not shown an ability to develop or use what hearing may be present to sense objects or environmental characteristics. This cannot infer that the deaf-blind student should not be greatly encouraged to use her hearing sense to find out as much about the surrounding environment as can possibly be done. The possible use of the combination of vision and audition as one sense cannot be overlooked. It is highly suggested that the deaf-blind student be put through many of the same activities for sound usage as the blind and visually impaired. This should be done with the idea that the sense of vision present may also be used along with the auditory sense.

The student's training in the use of sound as a sensory tool to replace vision should be incorporated in all phases of the developmental process. Training is basically a series of increasingly complex experiences with sound object detection. The student is introduced to and allowed to experience many sounds. These should be categorized into groups which are appropriate for the student. Home sounds, kitchen, living room, bedroom, school sound classroom, lunchroom, halls, gym, pool, etc., outside sounds traffic, grass, sidewalks, birds singing, etc. The student must experience and relate with these sounds as a person would visually become accustomed to the various sights in the world. The student will categorize the sounds and become familiar with them as well as he is able. These will develop through experience associated with the appropriate teaching cues.

Localizing sound and object detection will be developed in the same manner. An obstacle course on which the student may experience and practice object detection may be devised and used regularily in the classroom and the gym. These obstacles should be panels which are placed in a path on which the student walks. The panels can be wood or cardboard sheets which are suspended or support-

ed from behind. Their size should be 4-6 feet high and 3-4 feet in width. This can be separate from or incorporated into the obstacle course used for motor development purposes. It is of primary importance to first teach the student to make his own sound. Have his own sound source. Sound feedback comes from the sound of foot steps on a hard surface, clapping, fingers tapping, talking-yelling. The student should use whatever is most appropriate and effective. Initial experiences should be in an area where extraneous sounds are not a factor. The teacher should limit her own talking as much as possible, so as not to disorganize the student's auditory imput. In all other cases attempt to limit the external noise as much as possible. Eventually the student may need to be able to maneuver within a crowded hall and on noisy city streets. The introduction of this form of training is best accomplished when the student has developed the ability to confidently walk within an environment where sources of noise are limited. The training of the student for mobility outside the school and home environment is best accomplished by a special mobility trainer for the blind. It should not be our intent to do this person's job, but to provide preliminary training and experiences which will make the job of mobility training much easier and therefore more complete.

The student's eventual ability to communicate with and experience the world as it is should be part of all areas of education for the student. Each area has something to contribute for the sensory impaired student. The area of Physical Education-Motor Development has an important part to play because movement is easily related to words and manual signs. The movement experiences and motor learning with which the student is introduced and confronted in his schooling will effect many other areas of his total development. The development of effective communication skills and physical capabilities will positively affect the student's integration into a world where she is limited by the handicaps of sensory impairment. These aspects of the student's development cannot then realistically be overlooked to any degree if we are truly concerned with the total student.

EVALUATION

The Logan School Test of Motor Development for Deaf-Blind and Sensory Impaired.

A test will be developed which will serve to evaluate the students base level and progress in the area of Motor Development. This test will follow closely the already - developed Logan School Test of Motor Development. It will include similar items and testing areas but be specifically designed for administration to deaf-blind and sensory impaired students.

Following a period of observational evaluation and program development the test will be devised. Because to my knowledge no test of this type exists for this specific population I feel this period of research and study needs to be taken. For those who participate in this program a copy of the test and administration procedures will be provided when they are available. It is hoped that the broad use and development of this program will lead to an evaluation tool which can accurately serve the needs of this program and the special population of students intended to be served by this program. Those teachers and other professionals who may participate in this program are invited to submit any and all comments and suggestions on the administration of the test and particularily concerning the program itself. Your help is considered valuable and necessary to the total development of this program. Our main concern is the progress and positive advancement of our students and we can best serve them through positive assessment and cooperation. All of your help and assistance is solicited and much appreciated.

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